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INTUBATION AND TRACHEOTOMY IN DIPHTHERITIC CROUP, WITH REPORT OF CASES.

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The operation for intubation of the larynx is growing in favor in this country and abroad, although it is not calculated to, and does not, fulfill all the expectations of some of its most enthusiastic advocates; it is an operation, which if performed with reasonable skill and delicacy, is attended with the minimum amount of danger and results in a high percentage of recoveries, considering the dangerous complications which occur in the course of the frequently fatal diseases for which it is performed.

The operation of tracheotomy still has its field of usefulness, and will certainly maintain an important position on the list of scientific surgical procedures, even though it is at present, by many authorities, placed in a secondary position, and in the opinion of the writer of this paper should rarely be performed until after intubation has been thoroughly tried and failed.

Could all the statistics of the operations for intubation of the larynx, performed since the time of its introduction and adoption by the medical profession be gathered together and presented, they would certainly show that hundreds of little sufferers, who would have died of strangulation, have been saved from *that* at least, by the timely introduction of a tube. For, while the percentage of recoveries varies from 27 to 34 per cent., according to the statistical reports of various authorities, the percentage of cases in which the operation was a scientific success and accomplished its mission in relieving the dyspnea, and in rendering the patient comfortable, even though death eventually ensued, would be very high. Many cases which could never have been reached by any other method have been intubated in consequence of the more general use of the intubation tube, in comparison to the use of the tracheotomy tube, before or during the time of the adoption and performance of intubation.

Even though the percentage of recoveries after intubation, were not higher than the percentage of recoveries after tracheotomy, the number of lives saved would be as much greater, as the proportionate number of intubations would exceed the possible number of tracheotomies which might have been performed if intubation had never been suggested.

Since 1880, when intubation was first proposed by Dr. O'Dwyer, the number of intubators and the number of intubations have increased until they number thousands and there is hardly a city of any importance in the country where the operation for intubation is not performed.

During the time passed in the development of intubation, the number of advocates of tracheotomy as a primary procedure has materially decreased, and the operation has been performed in a comparatively small number of cases, although there are still a considerable number of eminent surgeons who prefer it.

The indications for intubation, are the presence of the characteristic symptoms of laryngeal stenosis and the operation should be performed immediately after these symptoms have developed, and not after the dyspnea has become so severe that great cyanosis and carbonic acid poisoning are present, to complicate the condition, although no case in which the operator is satisfied that dyspnea is due to stenosis should be declined, even though it were apparently *in extremis*, as the operation almost always gives comfort to the patient, and recovery may result in cases seemingly hopeless.

The age of the person should not be especially considered, as the comparative percentage of recoveries after intubation, in cases under three years of age is proportionately very large. The instruments for intubation which have been especially devised by Dr. O'Dwyer are apparently of the best possible size and shape, no suggestion of material value having recently been made, except a change in the shape of the tube, which consists in a decided rounding and flattening of its distal end, which is designed to prevent accidental false passage of the tube through the ventricle of the larynx.[1]

Great care should be taken in the selection of instruments, and only those manufactured by reliable manufacturers and made after the most approved and latest pattern accepted. They should be kept perfectly clean and carefully sterilized after each operation and always ready for immediate use. It is very common for the tube indicated as the correct size for a child of a given age, to be difficult of introduction, in which case the substitution of the next size smaller is admissible, as there is very little possibility of the tube passing below the vocal cords, and it is practically impossible for it to pass through the sub-glottic constriction of the larynx without the employment of unjustifiable force.

In addition to the intubation instruments, a complete set of trachea tubes and the necessary instruments for performing tracheotomy should always be carried in the same bag, in order that life may not be lost when the operation for tracheotomy is neces-

[1] Since writing the above, the set of instruments for intubation presented at this meeting of ASSOCIATION by Dr. F. E. Waxham, has been examined and is a decided improvement over the old set, particularly the introducer, which can be thoroughly sterilized and has an obturator attached made from a watch spring which can not kink as it is withdrawn from the tube.

sary, or indicated by the occurrence of one or the other of the accidents which may happen during intubation.

The difficulties which attend the operation for intubation and which are still insurmountable are: the presence of partly adherent membrane, which might be removed were it possible to devise some suitable method of reaching it; the pushing down of membrane before the tube during its introduction which will always be a source of danger, although if proper attention is given to detail in operating, and especially in holding the tube exactly in position during the extraction of the introducer and the subsequent removal of the string; the presence of membrane in or below the tube, occluding it, which must result in the immediate death of the patient unless the tube is coughed out or removed at once. The presence of membrane in the bronchi is a complication which can not be affected, either by intubation or tracheotomy.

Coughing out the tube can not be prevented; it may fall upon the floor or be swallowed, which is not serious as it indicates a probable decrease in the laryngeal edema, and in nearly all cases dyspnea will not return until ample time has elapsed for the intubator to be summoned and to re-introduce the tube. The removal of the tube may be easily and readily accomplished when indicated by the pressure method suggested by Dr. Cheatham of Louisville.

If dyspnea return after relief has occurred from a previous intubation, the tube should be removed on trial and re-introduced, this procedure frequently being beneficial in loosening partly detached membrane. The tube may be removed on trial some time between the fourth and sixth day if the symptoms are favorable, although it is generally safe to leave it, if the patient is doing nicely, until the pharyngeal deposit has cleared up.

The operation for tracheotomy, if for any reason intubation seems impracticable, should be performed at once: when there is irritability of the larynx preventing retention of the tube; when partially detached false membrane frequently embarrasses the breathing; when frequent plugging of the tube with thick viscid mucus and shreds of membrane persists; when membrane is pushed down before the tube and can not be expelled; when the tube has entered the ventricle of the larynx, making a false passage; when the tube has passed below the true vocal cords and can not be extracted; when there is inability to sufficiently nourish the patient; when there is continued irritation of the bronchi from the excessive aspiration of food.

The difficulty in feeding and properly nourishing the patient after intubation, is one of the most important factors, and certainly militates against a favorable termination, although some improvement has been made and the danger somewhat lessened by the adoption of the posture method of feeding, suggested by Dr. W. E. Casselberry of Chicago.

The inability to sufficiently nourish the patient is undoubtedly a serious drawback to the operation. The feeding should be carefully considered, the physician in charge making it an invariable practice to personally instruct the persons who are to care for the patient, indicating the amount and kind of food to be administered, the proper intervals of time between feeding, and observing that the ability exists to carry out the directions. For it is quite possible that the patient should become discouraged, and the case lost, through violent cough superinduced by injudicious efforts at feeding.

A thorough and complete knowledge of the requisite medical treatment is very essential to the favorable termination of the disease and each step must be carefully marked, and in addition to the general medication, any special symptoms or complications appearing during the progress of the disease must be immediately combated.

The fact that intubation and tracheotomy are purely mechanical procedures, only calculated to carry the patient along until such time as the appropriate medication shall have had the desired effect, must never be lost sight of, and strict attention given to every detail of the medication, nourishment and care.

There is no question but that the prognosis in either intubation or tracheotomy is materially affected by the variety of the disease, and the presence or virulence of the epidemic, the mortality always being greater at the height of the epidemic, when the ratio of deaths from all causes is greatest and severe complications more apt to be present.

If the dyspnea comes on considerably after the onset of the disease, and membrane has been present in the fauces and disappeared, the prognosis is particularly favorable, especially if the patient is not suffering from severe complications, serious exhaustion or fatal systemic poisoning.

Case 1.—June 29, 1891, in the practice of Dr. D. T. Bowden, a stout, robust, male child, who had been ill five days, although the parents did not think of diphtheria; his throat was sore but he played about until twenty-four hours before present date, when the laryngeal symptoms began to develop and they have increased steadily until present time, with hoarseness, croupy cough and considerable restlessness. Intubation was positively indicated, and was performed at 11:30 A.M. The tube was readily introduced on the first trial but did not give full relief to the dyspnea at first; there was great irritability of the larynx, cough, and occasional stoppage of the expiration, until ten minutes after the tube was introduced, when a complete ring of membrane was expelled about the size of the lumen of the trachea, and about one-half an inch long. After this the relief was complete, the pulse being 130, and the respirations 24 per minute; the temperature 100.

June 29, 5 P.M. The child was fairly comfortable, pulse 142, respiration 28; the air entered lower lobes of the lungs freely; there were some moist râles; was able to take nourishment in Casselberry position; the medical treatment—nourishment, stimulation, bichlorid and calomel.

June 30, A.M. Dr. Bowden has examined his water and reports albumen present in considerable quantity.

June 30, P.M. Child not doing well; respiration increased to 45, and marked sinking of the epigastric region; interference with the respiration. Some bronchial breathing; pulse 160 and feeble. The child has taken fair quantities of nourishment; the tube was removed by the pressure method of Dr. Cheatham of Louisville, without any difficulty or distress, after which a piece of membrane about the size of the first, evidently from the trachea, was coughed up; the dyspnea slightly increased and the tube was re-introduced; there was no improvement, the respirations continued to grow more rapid and shallow and the child died at 7 A.M. July 1, the tube having been retained forty-four hours. In this case the tube failed to reach the disease.

Diphtheritic membrane was present in fauces when first seen by Dr. Bowden; the 3 to 4 tube was used and worn forty-four hours. The principal complication and cause of death was extension of the disease to the bronchi.

Case 2.—June 30, 1891. Hogeman, age 2 years 11 months, a strong, healthy female child, has had diphtheria five days; a patient of Dr. B. C. Magennis. Laryngeal symptoms, thirty hours. Membrane in fauces well marked. The child was almost moribund; respirations catchy.

The tube passed into the esophagus on first trial; tube 2-year size used and passed on second trial; respiration

The cases here reported, nineteen in number, are tabulated for ready reference. There were six recoveries in all, one of which resulted from an operation for Tracheotomy, which was performed after Intubation had failed. The Tracheotomy was considered necessary in consequence of a feeling of uncertainty regarding the whereabouts of the tube.

Date.	No.	In the Practice of	Sex.	Age.	Duration of Laryngeal Symptoms.	Duration of Diphtheria.	Cause of Death.	Complications.	Result.	Size of Tube.	Faucial Diphtheria.
June, '91.	1	Dr. D. T. Bowden.	M.	3 yr. 10 mo.	24 hrs.	5 days.	Extension to Bronchi.	. . . . .	Died 44 hours after Intubation.	3 to 4	Present.
June, '91.	2	Dr. B. C. Magennis	F.	2 yr. 11 mo.	30 hrs.	5 days.	Extension to Bronchi.	Loose Membrane.	Died 3 days and 6 hours after Intubation.	2	Well marked.
Aug., '91.	3	Dr. P. A. Harris. .	M.	3 years.	24 hrs.	4 days.	Sepsis.	Pulmonary.	Died 36 hours after Intubation. 14 hours after coughed out tube.	3 to 4	Present.
Sept., '91.	4	Dr. W. S. Hurd . .	F.	14 months.	24 hrs.	1 week.	Asphyxia.	. . . . .	Died immediately from membrane pushed down before tube.	1	Present.
Oct., '91.	5	Dr. C. Terriberry. .	M.	4 yr. 6 mo.	5 days.	5 days.	. . . . .	Loose Membrane.	Recovered, tube retained 24 hours.	3 to 4	Started in Larynx, present later.
June, '92.	6	Dr. G. W. Terrib'rry	F.	3 yr. 6 mo.	30 hrs.	1 week.	Cardiac Paralysis.	Exhaustion.	Died 5 days after Intubation.	2	Present and ret'd after clearing.
Sept., '92.	7	Dr. Colfax	F.	4 years.	4 days.	4 days.	Cardiac Paralysis.	. . . . .	Died 15 hours after Intubation.	3 to 4	Present.
Sept., '92.	8	Dr. J. M. Stewart .	M.	4 yr. 6 mo.	4 days.	4 days.	. . . . .	. . . . .	Recovered. Tube introduced 3 times, retained 10 days.	3 to 4	Slight membrane.
Oct., '92.	9	Dr. J. H. Banta . .	F.	8 years.	24 hrs.	4 days.	Sepsis.	. . . . .	Died 2½ days after Intubation.	3 to 4 & 5 to 7	Present and marked.
Oct., '92.	10	Dr. R. Neer.	F.	9 years.	4 days.	4 days.	Pneumonia.	. . . . .	Died 4 days after Intubation.	5 to 7	No Deposit till later.
Dec., '91.	11	Dr. Flitcroft . . .	F.	8 years.	2 days.	3 days.	Exhaustion.	. . . . .	Died 6 hours after Intubation.	5 to 7	Marked.
Jan., '93.	12	Dr. P. A. Harris. .	M.	4 yr. 6 mo.	2 days.	2 days.	Dyspnea.	Loose Membrane.	Died 12 hours after effort at Intubation.	3 to 4	Very Extensive.
Jan., '93.	13	Dr. Wm. Blundell	M.	3 yr. 4 mo.	2 days.	1 week.	. . . . .	. . . . .	Recovered. Intubation failed. Operation, Tracheotomy, tube 19 days.	2	Not present till later.
Feb., '93.	14	Dr. J. H. Banta . .	F.	6 years.	48 hrs.	3 days.	Pneumonia.	Extension to Bronchi.	Died, tube retained 6 hours.	5 to 7	No membrane present.
Mch., '93.	15	Dr. D. T. Bowden .	M.	4 yr. 6 mo.	5 days.	2 days.	Sepsis.	. . . . .	Died, 24 hours after Intubation.	3 to 4	Thick black membrane.
Mch., '93.	16	Dr. Geo. Fischer .	F.	3 yr. 6 mo.	24 hrs.	48 hrs.	. . . . .	. . . . .	Recovered, tube removed on the 6th day.	2	Considerable membrane.
Apr., '93	17	Dr. J. M. Stewart .	M.	2 yr. 7 mo.	18 hrs.	5 days.	. . . . .	. . . . .	Recovered, coughed out tube ou 4th day.	2	Present.
Apr., '93.	18	Dr. Geo. Fischer .	M.	6 yr. 7 mo.	1 week.	1 week.	. . . . .	. . . . .	Recovered, coughed out tube on 6th day.	3 to 4	Not present till later.
May, '93.	19	Dr. Thos. Paton. .	F.	3 yr. 10 mo.	1 week.	1 week.	Exhaustion.	. . . . .	Died 2 days after Intubation.	3 to 4	No membrane.

artificial, and raw brandy in mouth finally stimulated cough and child came around; relief of dyspnea complete. Child restless and pulse not good; ordered feeding by posture method; medical treatment, calomel (gr. ½ every two hours).

July 1. Patient has done very well since operation until about 4:30 P.M., when the respirations grew more rapid and difficult. At 5:45 the tube was removed, by Cheatham's pressure method, without difficulty; some pieces of membrane came away with it and in about ten minutes a complete cast of the trachea, which looked much thinner on the lower end as though it had been expelled entire; it was about two inches in length. The child breathed some easier but the cough was very croupy. At 7:30 was hastily called and found the child considerably cyanosed; re-introduced tube and respirations became very quiet and comfortable; the patient was much exhausted and wished to be let alone; did not cough much although there was mucus in the tube; would not expectorate; pulse somewhat irregular; respirations 40 per minute.

July 2. Child passed a very comfortable night, breathing evenly and slowly; the parents report that she took a large amount of nourishment and in the morning was very bright and looked much better, pulse stronger, slower and regular; 140; respirations 36 per minute. In the afternoon the child's respirations became more hurried and restlessness developed, with considerable swelling of the glands of the neck; there was decided evidence of a stoppage from the presence of membrane in the trachea as shown by the puffing out of the suprasternal space at each expiration.

The tube was again removed; she expectorated some pieces of membrane but no cast.

The tube was re-introduced in about an hour. The patient was much exhausted and rallied very slowly; she still had symptoms of stoppage below the tube and the string was left attached to remove tube in case of necessity, but she grew worse until 11 P.M., when she died.

She wore the tube three days and six hours. The disease undoubtedly extended to the bronchi.

Case 3.—August 3, 1891. T. B., male, aged 3 years; in the practice of Dr. P. A. Harris. Was taken ill on Thursday four days before first seen; the case was rather obscure and the parents did not think it very bad; first developed croupy symptoms during Monday morning which increased during the day until evening.

At about 10 P.M., and less than twenty-four hours after the onset of the dyspnea, the child was greatly distressed and could not get sufficient air; had marked episternal sinking and also great sinking over the diaphragm, crowing respiration, and a very stridulous cough. Has been constantly upon the bichlorid treatment.

After being placed in the proper position intubation was attempted but did not succeed until the third trial, the tube passing into the esophagus twice. There was almost immediate cessation of the dyspnea, and the child, soon after the operation, seemed to feel very comfortable. The pulse was 144, the respiration 28, the color good and no stridor on respiration.

August 4. Dr. Harris reports respiration 27, pulse 150; the child is taking very little nourishment and has a severe cough at every effort. Advised Casselberry's method of feeding, and that the head be held low enough to make it absolutely impossible for food to pass into the trachea. In afternoon when coughing, the tube was expelled; the feeding had been easily and successfully accomplished by the Casselberry method.

The child breathed about as comfortably after the tube came out. Five hours afterwards the patient was breathing fairly well, but Dr. Leal stated that the child had lung complication; pulse 150, respiration about 30. The parents would not consent to have a re-introduction of the tube, even if it became necessary; at the time there was not sufficient obstruction to make it advisable. The child had no return of the dyspnea that indicated a re-introduction of the tube, but grew gradually weaker and finally passed quietly away.

Death, caused by sepsis and pulmonary complications, occurred on Wednesday morning, about thirty-six hours after the intubation and fourteen hours after the tube was coughed out.

Case 4.—Sept. 21, 1891. M. D., female child, age 14 months; a patient of Dr. W. S. Hurd. Child had been ill one week; with symptoms of stenosis about twenty-four hours. Had been strong and well but was extremely cyanosed, or rather had the appearance of a child having more difficulty in expiration than in inspiration.

The tube was introduced three times, slipping on two occasions into the esophagus, and when in the larynx not seeming to afford any relief. The child died during the efforts to introduce the tube.

The cause of death was membrane in the trachea which was pushed down before the tube and could not be expelled.

Case 5.—Oct. 9, 1891. Patient of Dr. C. Terriberry; male, 4½ years old. Diphtheritic symptoms first started in larynx five days before; some faucial patches second day after. Moderate temperature. Bichlorid treatment commenced at once; patient gradually grew worse from Saturday until Thursday evening, when he was intubated with instant relief; no difficulty in operating, tube passing in easily. Patient had a good night, taking considerable nourishment.

In the morning Dr. T. reported his temperature 99 1-10, pulse 120, tongue coated, bowels and kidneys acting, the urine being somewhat scanty and very high colored. Breathing about 30, and very comfortable.

At about 3:30 P.M. patient had a choking spell in which he became very much cyanosed and, after a severe struggle for breath and hard coughing he quieted down again so that at the time of making visit he was breathing very comfortably; he also spoke in a moderately loud voice, and it seemed as if the tube might have been coughed up and swallowed.

Was sent for at 6 P.M., and was informed that the child had had two such spells, and decided to re-intubate. On examination found the tube in situ, and removed a considerable quantity of mucus; concluded that there was membrane below the tube and that the tube must be removed.

Suddenly expiration ceased and shortly after, inspiration also; he became extremely cyanosed. The spasm came on while trying to induce him to open his mouth to allow removal of the tube; the jaws tightly closed and could not be opened; it seemed as though he was about to die, when finally his jaws were separated and the tube was removed without much difficulty by Cheatham's pressure method; by producing artificial respiration he was induced to breathe again and did so quite comfortably.

At 9 P.M. visited the house again, found him breathing rapidly and with difficulty; he had taken considerable nourishment but the larynx was evidently obstructed. Intubation was suggested but the mother would not consent as she was convinced her child must die. The patient, however, continued to take the medicine regularly and gradually improved. He finally made an excellent recovery, the tube having remained in place only twenty-four hours.

Case 6.—June 19, 1892. Dr. G. W. Terriberry's patient. Female, age 3½ years. One week ago the mother first discovered that the child had sore throat (she is slim, with small neck for her age); she seemed to get on nicely until the afternoon of the 18th, when she began to get hoarse; she gradually grew worse until I saw her on the evening of June 19. Immediate intubation was advised; the procedure was accomplished, the 2-year tube introduced, the impression being that the child was only 2½ years old; it was passed in readily on the second trial with immediate relief of the breathing; she was able to swallow without much difficulty in the Casselberry position, and the string was removed one-fourth of an hour after the intubation.

The child slept well all night and was in good condition in the morning. In consequence of inability to procure the services of a nurse, the child took very little nourishment after the intubation; she seemed to be more restless during the afternoon and evening; the breathing was very comfortable, although considerable quantities of mucus were present; a nurse was secured. The medical treatment consisted of milk and whisky and one thirty-second of a grain of bichlorid every two hours.

June 23, A. M. The child has been fairly comfortable since last note, but has taken only small amount of nourishment; the membrane has about disappeared from the fauces; her pulse has ranged from 124 to 150, and her temperature from 101 to 102 2-5; it came down readily after alcohol baths. Had some difficulty with breathing for two or three hours last night, due to membrane probably about the head of the tube; her respiration has ranged from 24 to 30; her tongue is still very much coated and she complained of some soreness about the throat.

June 24. Patient had a more comfortable night and has taken somewhat more nourishment. Temperature, 100 3-5. There seems to be some re formation of membrane in the pharynx; have used a spray of the peroxid of hydrogen solution. During the afternoon had two or three attacks of cyanosis apparently due to cardiac failure, the respiration being about normal at those times.

The tube was removed and rectal alimentation resorted to; the respirations were not impeded but she continued to sink, and died of exhaustion five days after intubation.

Case 7.—September, 1892. Female, 4 years of age. Dr. Colfax, attending physician. On the fourth day of the disease the patient had a sinking spell with considerable dyspnea in the morning, and Dr. C. thought the child was dead; she rallied, however, and when first seen was laboring with marked dyspnea, pale and anxious look, feeble and irregular pulse; immediately proceeded to intubate, which was done without any great difficulty on the second trial, although the child became very much exhausted.

There was considerable swelling of the epiglottis; in about twenty minutes the breathing became perfectly easy and the child said she felt very comfortable; she had a very fair pulse and died fifteen hours after the operation, from cardiac paralysis, the respiration having been entirely comfortable and easy to the end.

Case 8.—Male, 4½ years old, patient of Dr. J. M. Stewart. Was called on September 1, P.M. to see the child. He was at that time cyanosed, and had marked sinking on respiration, in the epigastric and suprasternal regions; had cough and difficulty in phonating. He had trouble with the larynx four days, at which time the whole difficulty seemed to commence, he having been playing about all the previous day and had not complained of feeling ill. On examination there was some little deposit on the fauces; the tongue was coated.

The operation was performed without much difficulty but was followed by vomiting of curdled milk. The boy had no trouble in taking a considerable quantity of nourishment in the Casselberry position, or even in eating ice when sitting up at any time during the disease. The tube seemed to cause some cough; his temperature was not high, 100, and he was quite comfortable; he had no complication or drawbacks of any kind. He coughed out the tube on the sixth day, Sept. 7, 1892. September 8, P.M. The tube remained out thirty-six hours, when there seemed to be a return of the bad symptoms, increased temperature and pulse, with difficulty in breathing; decided to re-introduce the tube in the evening: there seemed to be edema about the epiglottis, so that it was difficult to introduce the tube and a 2-year size was tried and introduced easily, but was soon coughed out again when the regular size was again tried and introduced. September 12. The tube is still in place; patient takes his nourishment fairly well; has a temperature varying from 99½ to 101 in the axilla; no deposit in the pharynx, tongue again clearing. September 13, A.M. Tube coughed out; temperature normal; pulse good; the child hungry; breathing comfortable. Uninterrupted recovery.

Case 9.—Oct. 13, 1992. Female, 8 years old; Dr. Banta attending physician. Has had sore throat for four days; trouble with respiration for twenty-four hours; is small for her age. First seen in the morning; better at dinner time. Intubation made at night. Could not introduce the regular sized tube but used a small one 3-to 4-year size, instead of 5 to 7. Relief marked, tube remained in twenty-four hours when it was coughed out followed by increasing dyspnea. Again intubated at 9 P.M.; succeeded in introducing the 5 to 7 tube with immediate relief. October 15, Doctor reports her having had a good night and her condition improved. The child lived until October 10 A.M., never having any difficulty with breathing and died of sepsis.

Case 10.—Nov. 17, 1892. Dr. R. Neer's case. Female, age 9 years. Patient had increasing hoarseness and cough for four days; there was no indication of a diphtheritic deposit in the pharynx. Her tongue was coated, she had a rapid pulse and great difficulty, especially in inspiration. Marked supra-clavicular sinking; a very hoarse stridulous cough. November 18. The trouble had increased, the dyspnea was attended by the anxious look, but there was still no deposit in pharynx; the pulse was 150 and of poor quality. Intubation was advised and afforded immediate relief. The tube, 5 to 7, was introduced with perfect ease at the first trial. November 19. Dr. Neer reports the case as progressing favorably; pulse and temperature slightly accelerated; great difficulty experienced in the feeding, a slight amount of milk causing her to cough.

November 20. Child bright and feeling very comfortable; says she did not mind the introduction of the tube; that it did not hurt her and made her feel much better; she can take milk in the Casselberry position without coughing much, but she does not like to take it; she drank a wine glass of milk and whisky while Dr. Neer was present. On examination it was thought that there was a suspicion of deposit upon left tonsil. Bowels moved twice during the day.

November 21. The child has been very restless and wanted the tube removed; she has some dyspnea, although the day before there was none; there was a characteristic membrane in the fauces. The tube was removed; there was nothing in it; the disease was below the tube. The child died in the evening from pneumonia, having been twelve hours without the tube, the dyspnea not having been marked.

Case 11.—December, 1892. Dr. Flitcroft, attending physician. Female, 8 years old. Had been ill three days; the laryngeal symptoms had been present two days and were very severe; the child was very much exhausted before the operation and the pulse was very rapid and irregular. The diphtheritic deposit was very great. Intubation was performed in the usual manner, a 5 to 7 tube being used. The dyspnea was entirely relieved, but the child never rallied and grew continually weaker until six hours after intubation, when she died from exhaustion.

Case 12.—Jan. 20, 1893. Healey, male, age 4½ years, patient of Dr. Harris; duration of diphtheria forty-eight hours. Membrane below the tube. Death resulted in twelve hours after efforts at intubation. The child had excessive diphtheritic deposits which seemed as if they had been much longer in coming than the history indicated; the tongue was very much coated and brownish. Patient cyanosed and breathed with great difficulty. The intubation was made six different times, the length of time which the tube could be retained varying from one to four or five minutes, when the expiratory movement would be accompanied by a decided flap of loose membrane over the distal end of the tube; the parents objected to further efforts and the patient was left to die. Tracheotomy was advised but not permitted.

Case 13.—Jan. 24, 1893. Dr. Blundell's patient. Male, 3 years, 4 months old. Patient had had laryngeal trouble every night for a week, but seemed in good health until the evening of the 23d, when he was first seen by Dr. Blundell. At noon on the 24th his dyspnea was so marked that intubation was advised; a small tube (2 years) was used and placed in position without any difficulty, giving great relief until three and one-half hours after, when he had a coughing spell and coughed up a considerable piece of membrane; this effort was accompanied with such severe strangulation that his mother thought he was dying. The dyspnea returned and was as severe as before intubation. On examination the tube could not be found, and as it was small for his age it was feared it might have passed below the vocal cords, and when the tube, size 3 to 4, which was tried, did not slip easily into the larynx, no force was used, but tracheotomy advised and performed in the usual manner.

January 25. He had a fair night and took considerable nourishment. He expectorated during the night a moderate quantity of diphtheritic membrane. Looked very comfortable and did not make any complaint. January 26. Has had one or two attacks of coughing, expelling considerable quantities of diphtheritic membrane; has taken a fair quantity of nourishment; says he has no pain. Temperature 101, pulse 120; has a sore on his lip with diphtheritic deposit on it which seems to be thinning; has taken ½ grain calomel every one and one-half hours. January 27. Has had a temperature of 101 7-10 during the night, coughing more frequently than on the night before. Has a considerable swelling and some deposit about wound which has gaped a great deal since swelling came on and is somewhat red about the edges. He looks well; his tongue is clearing at the end; can not breathe through mouth yet. Temperature 100, pulse 112. January 28. Wound affected with considerable deposit, swelling and redness. Had a hemorrhage from the nose last night, considerable blood came from the tube. His general appearance is good, tongue is clearing and is taking some nourishment. His temperature has not been higher than 100 and his pulse 116; this morning his temperature is 98, pulse 102, respiration 28 or 30; has swelling about the wound. Ordered peroxid of hydrogen, 15 volume solution to be applied to wound. January 29, P.M. Swelling about wound very much diminished and deposit nearly cleared; he passed a very comfortable night and day; deposit on lip nearly all gone; he is taking increased quantity of nourishment. He had a hemorrhage from the tube, during the night, about one-half teaspoonful of bright red blood; the highest temperature, 99. This evening the temperature is 98 1-10, his pulse 100; his general condition good; he passed intubation tube from bowels; he will not take his medicine.

January 30, A.M. Very comfortable, a few drops of blood coughed up in the night at about 10 A.M., tongue and membrane clearing, increased quantity of nourishment. Pulse 100, respiration 24, temperature normal; he can breathe through larynx with tube closed. January 31 and February 1. Condition has remained the same; have great difficulty in getting him to breathe through his mouth; pulse 100, temperature 98 to 98 7-10, respiration 24 to 28; taking nourishment; no deposit on wound; tongue rather more coated than it has been before. February 2. Condition about the same, except somewhat improved, especially the wound; slight bleeding at times with expectoration. Some milk has passed down and been coughed out of the tube; his urine, which has been scanty is more profuse; his bowels are regular. February 4, P.M. This afternoon removed the tube; it was followed by such great dyspnea that it was necessary to introduce another. The smaller sized tube was used; in introducing the canula during the afternoon a piece of granulation tissue seemed to have been cut off. It was about the size of the fenestra and one thirty-second of an inch thick.

He seemed in good condition this evening; his pulse ran up during and after the re-introduction of tube. In swallowing food, regurgitation of some of the fluid portion occurs. February 5. Temperature ran up to 102, with pulse 120, respiration 36. Child was not restless; gave quinin, ordered mild cathartic as bowels had not moved; had coughed up a great deal of mucus. February 6, A.M. Temperature normal, pulse 109, respiration 30. Bright and feels quite comfortable. February 7. Very well in morning; at noon, temperature 104, respiration 36, pulse 132; granulations around wound very puffy and large; is talking in whispers through mouth; will not permit tube to be corked. February 10. Has had no elevation of temperature since. Each night at about 1 A.M. has a sweat with considerable depression, his pulse becoming soft and much slower. Using glycozone on the wound and applying nitrate of silver to granulations. His urine is clearer, his tongue still coated; he can speak much better and has had a cork in the tube for half an hour without difficulty of breathing; has less trouble with food passing into the tube. On the nineteenth day after introducing the tube he was induced to have the cork in, which he did and kept it there all day and did not want it removed. In the evening the tube was removed and he has made an uninterrupted recovery.

Case 14.—Feb. 18, 1893. M. Dunning, 6 years; female; patient of Dr. Banta; diphtheria three days. Croup forty-eight hours, increasing; there was some question as to the presence of any diphtheria in this case, no membrane having been seen. February 18, 12 M. was called to see child; seemed fairly nourished, had great dyspnea, some cyanosis, history of previous attacks of inflammatory croup. No membrane in the pharynx; after steaming and slacking lime for two hours and no improvement taking place, her respiration being 37 to 40, her pulse 150 to 160, intubation was ordered and performed, tube, size 5 to 7. The tube necessitated the use of a slight degree of force but was introduced on the first trial. She had immediate relief from dyspnea but did not get into a good sound sleep. She was able to take her nourishment and did so during the night. February 18, 2 P.M. Child found in great discomfort, breathing rapidly and very shallow with some apparent effort but not sufficient dyspnea to indicate any closure around or stoppage in the tube. Her pulse was 180 or more, her temperature 106½. She undoubtedly had a very severe attack of pneumonia from which she died twelve hours after intubation.

Case 15.—March 4, 1893. Dr. Bowden's patient, male, 4½ years of age. Duration of disease four or five days. Duration of laryngeal symptoms two days; was a strong well-nourished child. Dyspnea very marked, great supra-clavicular sinking and depression of epigastrium on inspiration. Very dark-looking membrane, which was separated during the intubation; the urine was reported scanty and containing considerable quantities of albumen. He has a fairly good pulse; complained of severe headache. The intubation was performed and a piece of membrane from the fauces was drawn into the tube; several trials were made, the tube passing into the esophagus; it was finally introduced and afforded immediate relief. March 5, A.M. Child slept well after the intubation, but was somewhat delirious during the night; takes his nourishment well in Casselberry position. He looked very badly; has a pulse of 160 or more, and rapid respiration without any special dyspnea; no lung trouble apparent; temperature 103, axillary. The child continued to sink and died of sepsis in the afternoon, having no further laryngeal stenosis.

Case 16.—March 29, 1893. Dr. Fischer's patient. Female, 3½ years old. Forty-eight hours since onset of disease and twenty-four hours since laryngeal symptoms developed. Made the intubation without difficulty at 9 A.M. Great dyspnea was present and some cyanosis. The relief was instantaneous. Coughed up considerable mucus, the tongue was coated and the tonsils had considerable membranous deposit. Child went to sleep immediately after the operation.

March 30, A.M. Temperature 100, pulse 130, respiration 24; coughed up some mucus. Dr. Fischer is alarmed at the character of the pulse, which is feeble; otherwise the child is doing fairly well, taking considerable wine and milk. April 2. Child had done well since; respiration 18 or 20; pulse 95, but feeble; temperature from 99 to 100; is troubled by much coughing; takes fluid nourishment fairly well, also wine and brandy and ice-cream. April 4. The child has been very comfortable, the pulse ranging from 95 to 120 and full, the temperature 99 to 99½; the tongue and tonsil have cleared and the child has taken a fair quantity of liquid nourishment and stimulants; there has been but little difficulty with the feeding. The tube was removed by the Cheatham method without difficulty, and the indications pointed to a speedy recovery, the respirations being free and even, and the condition favorable; convalesced rapidly; she wore the tube six days before removed.

Case 17.—April 6, 1893. Male, age 2 years 7 months. Dr. Stewart's patient. Five days since onset; has only had difficulty of breathing about eighteen hours; had great cyanosis and dyspnea. Intubation was made and there seemed to be stoppage at head of tube; could not expectorate a thick ropy mucus; respiration rapid and somewhat difficult in the inspiratory movement; no difficulty in expiration. After about an hour seemed to be getting plenty of air and string was removed. April 7. Had a restless night with severe cough; coughed up tube at 8 A.M. At 10:30 was breathing quite comfortably. The child grew gradually worse and was re-intubated at 4:30 P.M. with instant and great relief. April 8. Child has had a comfortable night, has slept well and is in good condition. Temperature normal; has taken considerable nourishment. In the evening Dr. Stewart reports that the child had a severe spell of choking; the parents thought he would die, but was doing well when he saw him shortly after. Great difficulty was experienced in taking food, the paralysis of the fauces causing it to come up through the nose. April 10. The child coughed up the tube four days after intubation. He continued to improve each day from this on, and finally made a perfectly satisfactory recovery.

Case 18.—April 22, 1893. Patient of Dr. Fischer, age 6 years 7 months, male. Diphtheria one week; seemed to start in larynx. Has had frequent attacks of croup and the parents took this for one of the same and did not immediately call a physician. He continued to grow worse and Dr. Fischer was called; he made a diagnosis of diphtheria and in a few days found membrane in the fauces; the croupy symptoms gradually increased, and all night and the day of the operation were very severe; the child was cyanosed and there was a marked sinking of the epigastric region at each inspiration and a great amount of suprasternal depression. Intubation was advised and an effort to introduce tube was made; the patient was very docile but all efforts failed. The 3 to 4 tube was then tried and introduced at first trial with immediate relief; he took considerable nourishment in the usual posture, and did not have severe cough, although he did cough up a considerable quantity of thick mucus, just after the intubation. He grew steadily better each day and on Thursday the sixth day after the operation he coughed up the tube, after which he improved steadily. His temperature never ran higher than 101 after the operation. Three other children developed the disease after he did; two of them died of sepsis.

Case 19.—May 12, 1893. Dr. Paton's patient. Female, 3 years and 10 months old. Duration of disease one week; dyspnea gradually increasing. Very much cyanosed and nearing dissolution. There was no evidence of diphtheria.

The first attempt at intubation failed; the second was successful and was followed by coughing and expectoration of a considerable quantity of muco-pus; the breathing was rapid and the child was extremely depressed and had some sickness of the stomach with slight vomiting, but she said she felt comfortable.

May 14. Child seemed better than yesterday when the pulse was 150 and the respiration very rapid. Is taking large quantities of nourishment; pulse 120; respiration 42; seems bright and well; coughs somewhat and expectorates quantities of very thick yellow mucus; there is a decided membranous deposit in the throat on last visit; temperature not taken.

May 14, P.M. The child passed quietly away, without any struggle or difficulty in respiration. Death caused by exhaustion and possible lung complication, two days after intubation.

EIGHT CASES OF SYPHILITIC STENOSIS OF THE LARYNX CAUSED BY WEB FORMATION, OPERATED BY MY METHOD OF COMBINED TUBAGE AND THE KNIFE.

Read in the Section on Laryngology and Otology, at the Forty-fourth Annual Meeting of the American Medical Association.

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Syphilitic stenosis of the larynx usually presents to us a pathologic narrowing of its passage, and so to a large degree acts as an interference to free respiration, and thus becomes a condition of alarming danger. Little attention was paid to the pathology of this form of stricture or stenosis, and much less special attention to its treatment in the early years of the century. Nevertheless, in 1828 we find the great Liston dilating strictures of this kind after performing preliminary tracheotomy, through the tracheal opening, and about that time, too, Bouchut and Horace Green began to operate in a similar way, believing that all forms of stenosis were amenable to treatment by dilatation by means of tubes passed through and held between the stenosed parts. Their theories and practices met with much support by the surgeons of that day. Even Trousseau once thought of practicing it, but somehow it fell into disfavor, largely because the operation had neither the system nor the instrumentation we now have—and, one by one, they abandoned it, and so it was left to a comparatively recent period.

The discovery of the laryngoscope was largely responsible for the revival of Bouchut's and other forms of operations. The first disciples of Bouchut and Green were Marduel in 1863, and Delore who took up tubage for stenosed larynges a year later. Gradually such famous laryngologists as Stoerck, MacKenzie, Tuerck, Schrötter, Weinlechner, Hering and in our own country, O'Dwyer, began to study the pathology of stenosis of the larynx and its treatment, and the great honor and credit of perfecting the treatment of stenosis of the larynx belongs to O'Dwyer who made tubage of the larynx, a feasible, safe and effectual treatment of stenosis of the larynx.

"But honor to whom honor is due." To Bouchut, therefore, we must always look as the father of tubage for stenosis of the larynx.

Stricture of the larynx, according to its locality may be placed in one of three classes: the supraglottic, the glottic and the infra-glottic, and thus be best studied with regard to causes which bring about the stenosis.

The one to be considered here and which forms the subject of this paper is caused by the cicatrices, the scar tissue which results from the healing of ulcers about the larynx, forming web and bands of tissue that narrow and draw together the lumen of the organ in its narrow parts. This condition we all know obtains this in the healing of syphilitic ulcers

of the larynx. There are other forms of suddenly oncoming and gradually increasing dyspneas, such as occur in croup, diphtheria, tuberculosis of the larynx, and particularly in the acute form of laryngeal syphilis. Of these forms we already know a great deal and I need not dwell upon them further, but may pass at once to the cicatricial form, where the opening of the larynx is much narrowed by bands or web of cicatrix tissue. Many operations and modes of treatment of this form have been devised from time to time, with the most disappointing results, and the later re-discovery of tubage, however, bears riper fruit and puts into the shade the work of Bouchut, Schrötter, Weinlechner and the others.

The profession at large are thoroughly acquainted with the indications and the steps in the surgical practice of tubage of the larynx, and so I need consume no time with a detailed description of the steps in the operation.

I wish only to add to intubation as it is generally known as my own modification, or combined if you please, of operation and tubage.

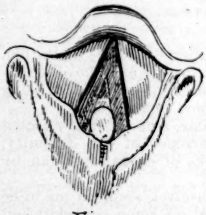

Fig. 1

Web forming the Stricture. Before Operation.

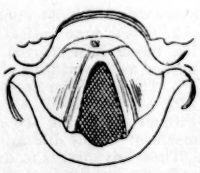

Fig. 2.

After Tubage and Operation.

Fig 3

Showing the Tube in position after the Cicatricial Web has been operated upon, and the continued dilatation in progress, until the edges of Web are healed.

Below I give my method and the result of eight cases I so treated since 1889. The first case so operated and reported was before the AMERICAN MEDICAL ASSOCIATION in that year. This procedure has served me well, and I am sure it is a far more satisfactory and radical plan of treatment than that of tubage and dilatation of syphilitic cicatricial bands alone, and gives a better chance of permanent cure without in any way increasing the risks of the operation.

In the accompanying drawing, is shown the pathologic condition of the first case I had the honor of reporting, as I observed it under the laryngeal mirror, and also the same larynx after operation and tubage. The drawing conveys to you a better and clearer idea than the most skillful word painting from my pen; also a third cut which explains itself, and the Lennox Browne knife.

The patient, a female age 35, was operated upon March 27, 1889. In this case the stenosis was very marked. (I therefore present it as a typical case for my method of operating.) On laryngoscopic examination an inflammatory syphilitic adhesion was seen, which existed between the cushion of the epiglottis by a tight fibrous band, uniting the vocal cords along the anterior two-thirds of their free border and reducing the glottic chink to the size of a goose quill. The right cord was much inflamed and the side of the larynx generally was thickened; respiration was harsh and whistling but regular during the day; there was much dyspnea; on slight exercise, at night and during sleep loud stridulous breathing on inspiration. The examination of the lungs elicited dullness over both apices.

The patient was placed on large doses of the iodids and cold applications to the throat. These conditions of the throat within three weeks' time were much improved. Most of the inflammation disappeared.

Now for the treatment of the cicatricial tissue. Dilatation was tried for three months by means of the O'Dwyer tubes. These were worn for two weeks at a time and then changed for larger sizes. Under this mode of treatment and dilatation the patient showed much improvement. She gained in weight. Her lungs again on physical examination the second week showed a very marked change. After two months the tubes were discontinued and the patient was discharged. Two months later the patient came again under my notice and complained of her breathing, saying that it was not as free as a month previous. I again examined her by the laryngoscope, from which I learned that the cicatricial web again began to interfere with normal respiration, closing around as before treatment. I concluded from the condition of affairs that it would be best to operate, and thereby if possible, give her permanent relief. These were the steps taken for the permanent cure of stenosis of syphilitic cicatrices.

This patient was one well trained for laryngoscopic examination and who could stand any amount of laryngeal manipulation. A good light was thrown upon the operating field, and thereby the entire condition thoroughly explored before any operative procedure was undertaken. A 20 per cent. solution of cocain was sprayed over the pharynx, post-pharyngeal wall, soft palate and larynx, in order to produce a complete local anesthesia of the entire surrounding localities. A gag was inserted on the left side of the mouth. This instrument should be made use of in all such operative maneuvers, so that one may be able to control the opening of the mouth, and not trust to the patient. An assistant should control the head of the patient against an ordinary head rest. These are the preliminary steps that I generally pursue.

The cutting is done with Lennox Browne's laryngeal dilator with cutting blades. This instrument possesses these advantages over the Whistler cutting dilator: in passing tubes into the larynx many difficulties are encountered, and especially through a cicatricial stricture are much greater than generally stated. This instrument of Browne's possesses the advantage of being a hollow tube of Schrötter and the cutting dilator of Whistler, so that the surgeon in operating is always sure by the outward passage of air, when the hollow tube is in the larynx; is able to incise with more certainty as to what he is cutting and,

moreover, in case of spasm the air passages are not entirely obstructed.

A large size laryngeal mirror is necessary in order to procure a good laryngeal image. The Lennox Browne cutting dilator was introduced with ease and the cicatricial web cut through. The breathing during the introduction of this instrument was momentarily disturbed; after its complete passage normal breathing was carried on through the hollow opening in the dilator. Hemorrhage was very slight.

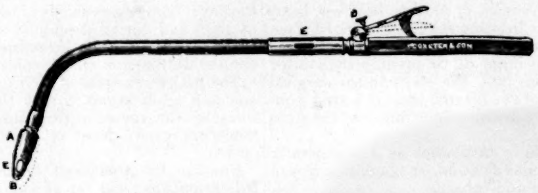

Fig. 4. The Lennox Browne Hollow Laryngeal Dilator, with Cutting Blade.
A—Terminal of the Hollow Dilator, containing the Cutting Blade, B, the extent of which is regulated by the screw at D. EE—Show openings for passage of air.

After the incision the instrument was withdrawn and the larynx thoroughly sprayed out. A few minutes later a large size hard rubber intubation tube was introduced into the larynx and kept there for three days without its removal. Cold applications by means of compresses were used for forty-eight hours with irrigation of the larynx, also spraying with a 10 per cent. solution of cocain for the relief of pain; this was continued for two days with much relief to the patient. Iodid of potash was again resorted to. Three days later the tube was removed and again replaced. An examination after the first removal of the tube showed a great improvement and healing of the wounded cicatricial web. The cicatrix was diminished, and the size of the opening made by the incision was thus kept open by the continued dilatation of the larger size tubes, until the edges of the cicatricial tissue were well healed. The time of healing of these edges lasted seven days. The tubes should be worn for two weeks at least after their first introduction, and should be removed daily for cleansing. Astringent solutions should be used in spray form for after treatment.

This patient shown you made a complete recovery as the result of this operation. It is now four years since the tube has been permanently removed, and from what you can see by the condition of his larynx which remains in the same state as after the incision, is certainly gratifying. The patient is in excellent health and breathing at a normal rate.

This method of treatment seems to me to be of a permanent value as compared with other methods. There is no necessity for a preliminary tracheotomy. The tedious dilatation with dilating instruments for an indefinite length of time, and then with a view of a non-success.

I do not mean to say that every case can thus be treated, but there are cases which come under our notice for treatment, where such treatment by this mode I here introduce deserves a trial.

The seven other cases that came under my observation since then were practically similar, in all respects, to the one I have just reported. They were selected from my clinic and private practice, and differed but slightly in the degree of stenosis and the amount of cicatricial web. They were treated exactly in the same way. The web, after being cut through in each case and kept dilated by proper fitting tubes healed kindly, and the opening of the larynx restored to its almost normal size.

The conclusions I feel justified in arriving at from my operation are these:

1. In the first place the destruction of the cicatricial web, by means of the knife, is preferable in every way to the older operation of simple dilatation.

2. It is a more radical procedure and the obstructing tissue is destroyed quickly, instead of being pushed aside and thus allowed to absorb.

3. The operation saves time, a cure being effected with less chance of a recurrence of the difficulty, without increasing the risks of operation, than by means of simple dilatation.

These advantages in themselves seem to me to be sufficient to give my operation some consideration before the plan of surgical interference is finally decided upon.

118 E. 16th Street, New York City.

THE TREATMENT OF HAY FEVER.

Special Discussion before the Section of Laryngology and Otology Pan-American Medical Congress, Washington, September, 1893.

By DRS. D. BRYSON DELAVAN, New York; PRICE BROWN, Toronto; JOHN O. ROE, Rochester; S. S. KOSER, Williamsport, Pa.; JAMES E. LOGAN, Kansas City, Mo.; F. C. COBB, Boston; J. H. BRYAN, Washington; E. FLETCHER INGALS, Chicago; and JOHN N. MACKENZIE, Baltimore.

DR. D. BRYSON DELAVAN, New York City.—No more formidable task can be imposed upon one than to open a discussion upon the subject of hay fever. I want, however, to draw you out on the treatment of hay fever, and I hope the discussion will be confined to the local and general treatment. There are two conflicting opinions; one is that hay fever is essentially a local condition. I think, however, there are comparatively few who entertain this idea. On the other hand it is largely conceded that however much local influences may have to do with the production of hay fever, there is broadly speaking, in the majority of cases at least, an underlying condition of some sort which tends to the production of this disease, and in so far it is necessary that we should shape our treatment accordingly. If we concede that there are general causes underlying hay fever, then we can not rely entirely upon the treatment of local conditions; we must look at the general, as well as the local state of the patient. In my opinion it is necessary, in order to treat hay fever successfully, to look into the general well being of the patient, and find whether he is suffering from lithemia, malaria, or any serious disorder of the heart, lungs or kidneys, and to find out the condition of his

digestive tract, and to improve these, or any other general or dietetic states which could contribute to the local trouble.

The local treatment of hay fever may be broadly summed up under two heads; that is to say, plans of treatment. Under the first plan we use various heroic therapeutic and surgical measures. Under the second plan we use various general therapeutic measures which are not heroic, the chief object of which is to subdue local irritation; and we also have surgical means which have exactly this same end in view. I believe that where conditions exist in the nose which contribute directly to the irritation of the nasal passages, such a condition as a distinct organic occlusion of the nose, then surgical means may be of great use. But on the other hand, I think that nasal surgery in this department has often been carried too far. I think it is extremely unwise to interfere in a case in which we can discover no good cause for interference, simply because the patient desires to be cauterized or have a spicula of bone removed which he supposes is there, or any other operation. Where there is not present a condition which distinctly calls for surgical interference I believe it is wrong—not only the removal of apparent obstructions, but the use of the galvano-cautery as applied to the nasal mucous membrane. It may be unnecessary to state here that the wholesale destruction of the nasal mucous membrane is not a good means of curing the disease, yet there are men who in a case of hay fever will destroy far and wide, by means of caustics or the galvano-cautery, the mucous membrane. I regard that as a pernicious thing which no man who understands the disease will do.

With regard to the use of cocain: every good thing seems to have its other side; the most valuable drugs. opium, for instance, may become the most dangerous, and so with cocain. It is doubtless a great boon to a person suffering from hay fever, but its indiscriminate use in hay fever is productive of serious evils; I am not sure but one would be justified in saying that in these cases cocain improperly used would do vastly more harm than good, and I would like to go on record as distinctly and vigorously opposing its indiscriminate use in these hyperesthetic cases.

To recapitulate: I think if we confine our discussion to a few of the points I have brought up we will have enough to do this afternoon, and I would like to call your attention especially to the recognition and treatment of coëxisting conditions. I would also call your attention to the abuse of surgical interference, and the proper and improper use of cocain. I think this discussion should include the best means of treatment, the most practical, the least theoretical and most useful. It seems to me the discussion comes in opportunely here, because this meeting represents such a wide diversity in every way.

Dr. Price Brown, Toronto—I suppose I am particularly qualified to speak on hay fever as I have been subject to it for the last ten years. I don't know, in my personal history, that I have suffered organically in any other way; I don't know that my system has been deteriorated; I don't know that my kidneys or lungs or organs generally have been at all out of order, but I know that periodically about the middle of August I have an attack of this disease. I may say, however, that before I ever had hay fever, frequently with the slightest cold I suffered from closure of the nasal passages to a certain extent; I would find the greatest difficulty in breathing through the nose in cold weather and this finally developed into an attack of hay fever. For two or three years I did nothing special for it, then I used a little cocain; but four years ago the attack I had was most intense; I remember that it did not seem as if I had the power of thinking or feeling anything except the intense sensibility produced by the disease; and I determined to operate upon myself, if I could find the part of the nasal cavity where the thing originated. I felt the indications in the back part of the left naris; after sneezing about one hundred times, I sprayed the left naris with a 10 per cent. solution of cocain, and passed probe into the passage. I found at the back end of what I assumed was the inferior turbinated, a sensitive spot; with another about the middle of the passage. I then passed the cautery blade to the posterior spot and turned on the electricity and singed it; then to the next spot and singed that. The result was that for the rest of the year my paroxysms of hay fever were not so severe. The following year the trouble commenced in the back of the right nostril, and when most intense I operated in the same way. I might say in passing that I have had many cases of hay fever under treatment at different times; and one of the prominent symptoms has been exceeding irritation of the palate, particularly the uvula, the patient desiring to scratch the uvula and rub his tongue over it; the result is there is great elongation of this organ. The following year I amputated half of my uvula, which resulted in great benefit. Last year my attack of hay fever was not very severe; this year it has been less than ever, and I have had no operation. It came on about the 24th, instead of the 14th, and I had no hay fever of any account until I started from Toronto, but on my first night in the hot dusty car coming South the attack became intense. I got alumnol the moment I heard of it.

The treatment I generally use is a slight solution of cocain, giving it myself. I use the cocain first and afterwards menthol in albolene. It seems to me the action of menthol in from five to ten or even twenty grains to the ounce has the effect of lengthening the action of the cocain. Latterly I use menthol more than I do anything else in my cases; this year I personally used no cocain whatever. I find it more beneficial to apply the menthol to the throat, and have the patient breathe in through the mouth and out through the nose.

In regard to any occlusion producing hay fever, I mentioned a case this morning where the columnar cartilage pressing against the wall of the nostril caused hay fever, and the removal of that cartilage removed the hay fever.

From the effect that alumnol has had upon me to-day I think it will prove a good thing and I shall try it in future.

Dr. John O. Roe, Rochester, N. Y.—In every case of hay fever there is more or less disease of the nasal mucous membrane, and the more I see of hay fever the more I am convinced of the correctness of this assertion. I have yet to see a patient in whom disease of some portion of the nasal mucous membrane does not exist, and when I hear a case reported in which the patient suffered intensely from hay fever, but without any local disease in the nose, I think that the doctor is in error and did not discover the local lesion, perhaps on account of making only a cursory examination. When we consider that the nasal mucous membrane in adults covers a region of about twenty-six square inches, it is not surprising that disease may lurk in some portions and remain there undiscovered, unless a most thorough examination is made. Hay fever may be considered a neurosis (pardon me for an allusion to the neurotic theory), but we have a great many neurotic people who do have hay fever, and there are many people who have a great deal of disease in the nose who do not have hay fever; but when a person who is intensely neurotic has a good deal of trouble with his nose, he is quite sure to have hay fever. There are a great many, as in Dr. Brown's own case, who have hay fever when there is apparently no neurotic element, and in such cases the disease is, I believe, as much a local disease as any disease can well be. Disease in the nose, that may be the seat of the irritation, is not necessarily confined to

any one region, as it has been believed to be confined to the region of the inferior turbinated bodies, either the anterior or posterior end. The part that I have found to be most sensitive in these cases is the nasal septum, and this undue sensitiveness has been usually excited by an intermittent or constant pressure of the turbinated bodies. The exciting cause of these neurotic conditions I believe to be in nearly all cases intranasal pressure—either from intermittent or constant contact between the different portions of the interior of the nose. It is, however, not necessary for this pressure to exist between the turbinated bodies and the septum, for it may exist between the turbinated bodies themselves, or the inferior turbinated body and the floor of the nose. In the latter instance the extreme sensitiveness is confined to these bodies.

The galvano-cautery in the treatment of these cases is frequently the most serviceable agent we have, but there are many conditions of the nose in which its use is not advisable. It is useful in vascular turgescence, but can not be employed to advantage in firm hypertrophy or osseous excrescences. It is usually not advisable to institute treatment during the attack, although in some instances the abnormal conditions in the nose are emphasized during the attack and should be attended to at that time.

The beneficial effect of local treatment can not be better illustrated than by the case of a young lady whom I treated last summer one year ago. She was about twenty-three years of age, distinctly neurotic and neurasthenic and her mother was also neurotic. She had suffered from hay fever severely for seven years and was willing to have anything and everything done that would relieve her of this distressing complaint. As it was so near the time of her attack, I advised her to have the nostril in which she had the most difficulty treated, as she was unable to go through the necessary treatment for the removal of the difficulty from both sides at the same time. There was pressure of both the inferior and middle turbinated bodies against the septum. This I relieved and carefully treated the nose. The result was that she passed through the summer without any trouble in this, her left nostril, while in the right nostril which had not been treated she suffered from hay fever quite severely, although, the left nostril being free, respiration remained unobstructed and she did not suffer the distress experienced when both nostrils were completely blocked up. Later in the season after the hay fever period had passed, I treated the other side carefully and she has passed through the hay fever season this year without any disturbance from hay fever.

In all cases of hay fever, more or less constitutional treatment is advisable, as the local disturbance has a marked effect in lowering the tone of the system, independently of the neurotic trouble with which it is frequently associated. The tonics proposed by Dr. Mackenzie are excellent, and I have found them of great service. One thing that is of importance is nutriment to build up the system, and one of the best nutriments I have found to be eggs. By breaking an egg into a glass and having the patient swallow it whole he will take from five to ten eggs or even twenty a day. Many patients will be very much improved, and their attacks somewhat modified by increasing the resistance of the system to local irritation, or frequently by the employment of a sedative that will abolish to a great degree the response of the nervous system to the local irritation, but in addition to this there is in all cases some localized disease, which should be found and carefully treated. Therefore, however much you treat the person generally and build up his nervous system, or however much you may improve the condition of the vascular system, you must attend to the local condition in the nose, be it ever so severe or ever so slight, if you wish to relieve your patient positively and permanently from hay fever.

DR. S. S. KOSER, Williamsport, Pa.—I am glad to note on the part of this Section, the deprecation of the free and undue use of cocain. It was only a week ago that a pharmacist of my city mentioned to me that he had regularly several customers for cocain, and added that he was quite sure that the habit was first contracted in all of them from using the tablets at home that the market is now flooded with for these nasal cases. I believe the position taken this afternoon in the matter of prescribing cocain, not permitting the patient to use it at home, is wise. It is a terrible thing to be the means of establishing cocain inebriety in any case. In connection with this discussion, I wish to call attention to a couple of articles that have done me good service as temporizing agents in mitigating the severity of hay fever. One is terebene. I have certainly found it quite valuable as a mitigating agent. I would also like to call attention to an old remedy, but one that has not been referred to in this discussion, and that is the inhalation of a strong solution of carbolic acid, camphor and chloroform, used in a smelling bottle.

In fact, these cases come to us at such a stage that I rather prefer to palliate them first. I do not believe it is good surgery to rush into an operation on the nose when the engorgement is so great; that is, I do not believe proper conditions exist for good surgical repair. I would rather say it is good practice to first palliate the case and watch for one of those opportunities which the gentleman from Toronto (Dr. Price Brown) referred to as the conditions present prior to developing hay fever symptoms, and to operate on the turbinates at some other time than during that attack. Preëminently, in my experience, the operation that does the most good is to gently clip the lower ends of the turbinated bones, and this is more permanent. This in my hands yields the most lasting benefit, and I have frequently preceded an operation with the use of the cautery, so that there might be less tendency to hemorrhage following the operation itself.

The point then, I wish to make is, that in my experience, I have had better results in operative procedures if I deferred the operation until the intervals of the attack. I believe, then, that the permanent results are better, the parts will heal kindlier, and in all respects will do our patient a greater good.

DR. JAMES E. LOGAN, Kansas City, Mo.—I wish to confirm Dr. Roe's experience in hay fever. Living in a country where hay fever is prevalent, I have seen a great many cases, but I have yet to see a case uncomplicated with hypertrophic rhinitis, or rhinitis in some form. I read an article before one of our medical societies in 1886, in which I made the statement that I did not believe hay fever could exist without a previously existing rhinitis of some form, and after years of experience I am willing to support that statement to a considerable extent, for I have never seen a case where there has not been some such trouble, either from a deflected septum, exostosis, hypertrophic rhinitis, or some disease where there was a soil in which this idiosyncrasy was produced.

The treatment I have used for the last few years has been the cautery. I begin the cauterizations about a week previous to the first attack and continue them at intervals through the period of hay fever, and by continuing these cauterizations after the period has passed, relieving whatever condition, mechanical or otherwise that existed there, and in succeeding year continuing a mild course of cauterization through the period of hay fever, I have relieved quite a number; I have recorded some cases of very pronounced recovery in this respect. A lawyer, who has an

office next to mine, who was a constant sufferer for sixteen years, suffering the tortures of death almost from hay fever, and had traveled the world over seeking relief, is a standing monument of the efficacy of the treatment of hay fever as I have suggested it, and to-day he has no trouble whatever from it, and there are a number of cases of a similar nature. The neurotic tendency, which I believe exists in nearly every one of these cases, whether it be perceptible to the physician or the patient, is a certain latent element which must be corrected by medicinal means during the hay fever period. Beginning a week previous to the attack, I administer a preparation of nitrate of sodium with a half grain of camphor, continuing that six weeks after the attack has passed; I have found it to be an admirable sedative and can heartily recommend it. My mother was a great sufferer from hay fever and asthma, and in 1885 I removed from her right nostril a large tumor, after which she had no trouble from hay fever or asthma until two years ago, when I found there was considerable hypertrophy existing in the left nostril, also in the right, together with a deflected septum, that by reason of my position in the family I had to refuse to operate upon. About six weeks ago I removed an exostosis of considerable extent, and she writes me she has had no hay fever this season so far, and no asthma. I think there is great progress yet to be made and many things to be found out in the treatment of hay fever.

Dr. F. C. Cobb, Boston.—I would like to know whether, in hay fever, the writer includes vaso-motor or hyperesthetic rhinitis? I have had some cases of that kind, and although in a good many of them I could not find any very marked nasal obstruction, yet cauterization, not of a very wide area but usually over the lower turbinated and points opposite to it on the septum, which seemed to be especially hyperesthetic, appeared to give great relief, and a year later I heard from these cases that they had had very little if any hay fever. But those cases which were complicated with asthma still had the asthma; there was very little relief from that. These were hospital cases operated upon year before last, and they all had a great deal of trouble; some were complicated with polypi, which of course were removed. But all to whom I wrote reported very little nasal trouble, so I believe that cauterization, at least to a limited extent, is of considerable value.

Dr. J. H. Bryan, Washington, D. C.—I think there must be two conditions or else we would not have such diametrically opposite ideas. One is due to a morbid condition of the nose, which of course is relievable, but those cases in which, in the interval of attacks there is no morbid condition, I do not believe can be cured by local treatment, yet the symptoms can be greatly palliated. I think in this locality we have as much hay fever as anywhere in the country, and I have seen quite a number of cases. Those which have been dependent upon exostosis or pressure of the turbinated bodies have been easily relieved and have not returned, but those which are entirely neurotic in character where, in the interval of the hay fever attacks, as far as observation goes, it is impossible to see any morbid condition excited invariably return, in this part of the country, about the 15th of August. I can not understand why there should be a discrepancy of opinion. Dr. Roe and Dr. Logan are positive the condition is not due to anything but intranasal disturbance, but I have two cases in which I think it is impossible to find anything existing in the nose in the interval of the attacks.

Dr. E. Fletcher Ingals (Executive President), Chicago.—I did not intend to say anything upon this subject, but I am so heartily in accord with the last speaker that I wish to amplify and support what he has said. I have thought for a long time that where there is nothing discoverable in the nose during the interval, treatment of the nasal cavities is useless; where there is something that gives the patient discomfort, treatment of the nasal cavities may be valuable. I have seen several cases where there was no hypertrophy or other form of obstruction, in which there was hyperesthesia; and in these, cauterization has been beneficial.

As to the time of cauterization, my plan is to complete it at least two or three weeks before the attack is expected, so as to allow the mucous membrane to become healed before the onset of the disease. The cauterizations are rarely made oftener than once in five days, and each covers an area of not more than a centimeter in diameter. The burn is superficial, never destroying the mucous membrane. Such cauterization has an effect similar to that of a blister on the skin, and after the treatment is completed it is impossible to find cicatricial tissue. In some cases where there is much swelling, deeper linear cauterizations are necessary.

I do not favor removal of the turbinated bodies in the way suggested by one of the speakers, believing that it is not best to destroy so much of the mucous membrane. If I wished to remove the turbinated bone I would run a trephine or burr through it, beneath the mucous membrane, thus removing enough of the bone so that the soft tissue would fall to the side of the meatus and be out of the way. I have seen one case in which soothing treatment alone, carried out daily by the patient for a period of two years, prevented recurrence of the attacks. I have seen one case where no topical or general treatment was employed, in which the patient, when the attack came on, by force of will never sneezed if he could possibly avoid it, and persistently refrained from blowing or wiping the nose. As a result of this course he had only a slight attack the first year it was tried, and the next year practically none.

I hope some of the other gentlemen will tell us what can be done by general treatment. It seems to me that half of the cases can be relieved, perhaps cured, by local treatment during the interim, but if the patient comes to us after the attack has been established local treatment is not important, excepting to soothe the parts. A day or two ago, a physician who has been troubled with hay fever told me that he has a rheumatic diathesis for which he has recently taken a few grains of salicylate of soda, which he feels confident is preventing him from having hay fever this season. It may be that the gouty diathesis causes hay fever in some cases, the rheumatic condition in others, and I have no doubt that digestive disorders have much to do with it in some instances.

For relief of hay fever that can not be prevented by local measures, I rely much upon a general tonic and sedative treatment somewhat similar to that recommended by the late Morell Mackenzie, consisting of the phosphate of brucia combined with camphor, hyoscamus, salol, and sometimes with valerianate of quinin. I have used this treatment for two or three years, I think with much advantage. I have the patient commence it three or four weeks before the attack is expected and continue it throughout the season.

Dr. John N. Mackenzie, Baltimore.—I have been very much interested in the discussion, and I am very much pleased that the word pollen has not occurred in the remarks made. The day is dawning when we will find a solution of this problem in the study of pathologic law and not on an inquiry into the processes of plant reproduction. It is difficult to disassociate the pathology of hay fever from its treatment, because the latter depends upon what is conceived of the former. The pollen theory I regard as the greatest bar we have had to the march of therapeusis in this disease, and next to that I am afraid we are having another barrier set up in the too exclusive theory of the

nasal nature of the malady; if we view it from the higher vantage ground of general pathology and laws of health we may catch a very much broader glimpse of the protean aspects of the problem, and be in a much better position to relieve our patients than if we follow the beaten track of the pollen theorists. I certainly see cases in which there is no respiratory lesion whatever during the interregnum between the attacks. When I first began to investigate this matter I was allured by the new theories concerning the disease, and for a long time was completely under their dominion, but further examination and broader conceptions of the disease have taught me the lesson that in a goodly proportion of the cases there is no appreciable local respiratory lesion whatever. Another point: it is not the nose alone where these lesions are found; the area in which the nerve storm breaks will depend upon the seat of the local pathologic process; for example, take a neurasthenic with a polypus in the rectum; the nervous disturbance produced by the polypus would be referred to the lower bowel, whereas in the case of a polypus in the nose the impressions would be referred to the upper respiratory tract. These lesions, when they do exist, as they undoubtedly do, may exist in the nose, pharynx, retro-pharynx, larynx, bronchial tubes and trachea even. The point I wish to make is that the nose alone is not the only part of the respiratory tract that is responsible for the outbreaks of the disease falsely called hay fever. A great deal has been said in recent years about pressure irritation, but it seems to me that instead of producing hypertrophy it is more likely to produce atrophy. Take, as an illustration, cases in which the middle turbinated bone is enormously developed; as it gets larger and larger instead of producing hypertrophy of the septum it produces atrophy and goes through to the other side.

Dr. Cobb has brought up the question of the identity of these different forms. They are all blood relations, coryza, vaso-motor, hay fever, rose cold, June cold, and if we could classify them as one disease it would simplify matters very much.

As to the plan of treatment: my rule has always been to examine the patient, going over him from head to foot, finding out any peculiarity, any disease, local or general, that might be the source of any systemic local or remote irritation. They are all different like the stars, and in that way you get at a more rational plan of treatment. Having done that, I look carefully after any disease, either gross or microscopic, in the respiratory passage; not in the nose alone, but all through the tract, from the tip of the nose to the bronchial tubes. After having found the general condition I treat according to the circumstances of the case.

Dr. Ingals wishes to know about the general tonic treatment. I can not give any rule. I feed the nervous system; it is always broken down; you may not recognize it, as Dr. Brown has said, but nevertheless there is something nervous in his constitution. We not always find conspicuous nervous phenomena among hay fever patients, but there is always a nervous organization—a screw loose somewhere in the nervous mechanism. I generally start out with a pill containing about one-sixteenth of a grain of phosphide of zinc, about two grains of quinia, one-fourth grain of extract of nux vomica, to be taken before meals, and after meals three to five drops of Donavan's or Fowler's solution in water. Very frequently I have to substitute some other nerve tonic, but the main point is that the nervous system must be braced up. If there be disease of the respiratory organs remove it if possible. If there be no apparent disease and if upon experimental stimulation of different portions of the mucous membrane no sensitive areas are to be found, let it severely alone. But if on the contrary, as is frequently the case, we can localize these areas, I treat them by cauterization, and for this purpose the galvano-cautery transcends all other methods. We find these sensitive areas not only in the places where I have located them in the nasal passages, but also in other portions of the respiratory tract, in the posterior wall of the pharynx, in the arytenoid, commissure and the posterior wall of the trachea. Why is it that the removal of a nasal polypus, for example, will dissipate hay fever permanently? The explanation it seems to me is this: take an illustrative case; the patient consults his physician, perhaps suffering from violent paroxysms of sneezing, obscure cough and other symptoms referable to some reflex producing agency. The patient goes on unrelieved, day after day. Asthma is finally added to his symptoms, and finally he blooms out into a regular "hay fever" patient. If it is summer the physician tells him he has hay fever; if it is winter he is told he has asthma. At this stage of the disease a polypus is discovered and removed, and the reflex symptoms are dissipated and the patient gets well. What is the explanation of that? No attention has been paid to the central nervous apparatus; simple operation work in the nose has secured the result. In this class of cases the way in which the nervous system is influenced is through the constant irritation by the foreign body in the nose; the irritation of the nerve centers, the weariness they experience at being forever called upon to discharge their functions. With the removal of the polypus the irritation is taken away and *physiologic rest* secured for the centers, and in that way the patient gets well. If the polypus remains unrecognized, the condition goes on for years; other organs are included in the arc of reflex disturbance, changes occur in different organs which are impossible of eradication, and local treatment done will lead to temporary relief, but will not effect a permanent cure. In regard to surgery, it is called for when surgery is necessary, and it is only necessary when there is something pathologic to be removed from the respiratory apparatus. I omitted to make an important point, and that is that hay fever does not exist only at one time of the year; I believe it is like epilepsy—with you day and night summer and winter. One of the worst cases of hay fever I ever saw was a lady in Baltimore whom I treated for four successive Januarys. She never had it in any other month; it was a marked case of hay fever with asthma. My plan is not to commence with a tonic at the period of attack, but I commence from six to eight weeks, sometimes three months before the expected attack and I feed the nervous system for all it is worth during that time; and I not only do that but I treat the patient throughout the year at certain intervals, depending upon the patient, the character of the case, etc. I treat them during the entire year as if they were just on the verge of a paroxysm, and one of the chief difficulties I have is to follow my patients. They will get apparently well, and will think, "this is all humbug; I don't feel nervous; I am not going to have a paroxysm for six or eight months and I will let the thing drop."

DR. J. BRYSON DELAVAN, New York City.—The Doctor has brought out the most important point I had in mind in bringing forward this discussion, and I think it can not be too vigorously emphasized. We so often see patients and physicians putting off the treatment of the disease until the attack begins. The golden opportunity for treatment, according to my experience, is in the interregnum; that is, in those cases where there is present any nasal or constitutional trouble. I have seen cases in which during the intervals between the attacks the nasal condition seemed to be normal, and although I have used my best endeavor to find an abnormality I have not succeeded. However, we commonly have hypertrophic conditions—catarrh, exostosis,

nasal polypus and various other deformities present in these cases, and these conditions persist to a greater or less degree throughout the year.

We can all agree to the following propositions: first, that the general condition of the patient should be kept up to the best possible limit; second, that the best opportunity for relieving the patient will be found between the attacks, when abnormal conditions of the nose should be treated, whether by surgical or therapeutic measures, to be determined by the nature of a given case; and, third, that during the attack the treatment applied should have for its prime object the alleviation of the existing symptoms.

In regard to treatment during the attack: I think it would not be unwise for this body to place itself on record as distinctly opposed to the indiscriminate and careless use of cocain. What one of the gentlemen said with regard to this matter in his locality, might have been said I think by every one present. We all find it commonly used and commonly abused, and I know that it is a source of a great deal of injury, and I wish we might go on record as opposing the evil.

Finally, the fact has not been touched upon, although we all recognize it, that when we have exhausted our therapeutics and surgical means we have done all that lies in our power for the patient. But if we do not succeed in relieving him we can almost invariably help him by sending him to some locality where he will enjoy immunity from his attacks. I believe in this class of cases, where the patient can be sent away during the time he is having his attacks, where he can be treated between the periods of expected attacks, that in time the attacks may be entirely done away with in a large majority of instances.

Dr. John N. Mackenzie, Baltimore.—I wish to indorse what Dr. Delavan has said in regard to the use of cocain. I have long since given it up in the treatment of this disease, except as a purely palliative measure. At a meeting of the Laryngological Association some years ago, in Detroit, I called attention to the fact, shortly after the drug was brought over to this country, that the time came sooner or later when cocain dilated the blood vessels in the mucous membrane of the throat and nasal passages, and I think that point is now perfectly well established and Dr. Delavan's denunciation of its indiscriminate use is correct. But there is another point not generally known, namely, the evil effect menthol sometimes produces. I know of two cases in the practice of a fellow practitioner in which menthol has given rise to brain symptoms similar to those cocain produces. They were both singers and had learned that a little menthol squirted into the nose with an eye dropper, just before they were going to sing would make their voices more resonant, so it had become their practice every time they were to sing to drop in a little of this seemingly harmless thing, and finally the friends of one of them noticed that she was having hallucinations and that her mind was becoming otherwise affected, This was spoken of to a physician and when she ceased taking the menthol all her bad symptoms disappeared. The other case was affected in the same way and on discontinuing the use of menthol became well again.

ABUSES OF COCAIN IN NASAL TREATMENT

Read in the Section on Laryngology and Otology, at the Forty-fourth Annual Meeting of the American Medical Association.

BY GEORGE WILKINSON, M.D.

OMAHA, NEB.

The ability of this drug to astringe the mucous membrane of the nose and in ordinary catarrhal troubles, (namely hypertrophic conditions of the membrane) to give immediate relief, is being taken advantage of by the unscrupulous to such an extent that the matter is assuming very grave importance.

That the use of these catarrhal snuffs, strongly impregnated with cocain, is the most fearful aspect of the cocain habit has no doubt been brought to the minds of many of the profession ere this. The amount of the drug used in these proprietary or patented remedies is out of all proportion for their use simply for contracting the turbinate bodies, as is proven by the fact that a very few insufflations of the powder lead to an appetite and a craving, and frequently the unwitting patient is rendered a slave almost from the start to its seductive charms.

This can be readily understood when consideration is given to the fact that cocain is most seductive as a narcotic to many persons, and this, coupled with the fact that it temporarily clears the head, makes it an insidious means of wreaking havoc, and the greatest recent triumph of the devil.

An assay of one of these products of his Satanic Majesty gives a result something like this: estimation of cocain in a powder containing bismuth, menthol, carbonate of magnesia, bicarbonate of sodium and sugar of milk. Take fifty grains of the powder, put into a mortar of at least eight fluidounce capacity, fill with two drachms water, add gradually diluted muriat. acid until the liquid is distinctly acid to litmus paper, avoiding loss by effervescing. Stir well and pour through a small filter into a two ounce vial, rinse two to three times with a little water which is to be passed through the same filter. Wash the filter with water, using just a little at a time, till the whole will be about one ounce; add one-half ounce sulphuric ether; shake for ten minutes (to remove the menthol); pour into a glass separator. When the ether has separated draw off the aqueous fluid into the same vial; the ether in the separator is to be rejected. Repeat the washing two to three times more, or until the menthol is removed. Then render the fluid alkalin with ammonia water, shake with one-half ounce ether as before. After complete separation pour the aqueous fluid into the same vial. The etherial fluid which contains now the cocain in solution, is to be passed through a small filter into a weighed glass breaker, capacity about one ounce. Place on a water bath till the ether is evaporated. Repeat the operation three or four times, then dry to constant weight and weigh as pure cocain.

Thus, to every drachm of a very insoluble powder-mixture, composed mostly of bismuth, there was nearly three grains of hydrochlorate of cocain. When it is taken into consideration, that in a number of instances your essayist found that the dose of these snuffs being taken ad libitum; and consequently users of the same are found to habitually have used as much as two to three ounces per nasi, or forty and sixty grains a day in this manner; there is surely time for a halt to be called by the interference of the law.

I propose in this paper to give a general sketch from a study by personal contact with a colony of cocain habitués in the city of Omaha, all instituted by the use of one preparation highly advertised as a snuff and a cure for catarrh.

It is not every one of these who have found it difficult to break off from using the drug; indeed, many claim, although they were using thirty and forty grains a day, and that as soon as the nature of the remedy became known to them, that they easily

stopped abruptly. But the result in the end is by no means always so happy as this and, to quote Shay: "Once a man flies to cocain for relief from cares that annoy, he generally continues with such rapid strides toward such complete subjugation to its bewitching thralldom, as but few will ever be rescued from by any power of will which they may be able to bring to their aid," has been in some of the cases referred to well exemplified. It is not necessary for me to dwell upon the toxic symptoms more than to point out two primary effects of the drug when used as a snuff. The craving for it is simply pitiful; the habitué will have it about him at all hazards. He carries it about in his pockets, and the effect is so temporary and seems so unsatisfying that he is continually snuffing it, and in many cases he soon learns that he can get better results by taking it on his tongue and thus he begins to eat it. The first annoying symptom which these people complain of is insomnia, and here for the first time they realize the pernicious nature of the habit they are forming.

The attempt to break off in the most instances begins at this time, and the success or defeat is simply a repetition comparable to the same experience in the habit of drink. To dwell further on cocainism is beyond my theme. What I desire to specifically dwell upon, and from an experience with those who have been led into the cocain habit by its use in nasal catarrh is this: how far should we be allowed to go in placing in the hands of patients the cocain spray? What quantity is safe and yet effective? My experience is that, absorbed by the nasal mucous membrane, in the quantities which we might use there is no danger, yet we must always remember that it is not always the quantity but the susceptibility of the patient. Some people will soon learn, if not already told, what the drug is and the hint is enough for them to increase the dose. It is the old story of the physician's liability for instituting the habit, as with morphin.

RHINITIS ATROPHICA FETIDA (OZENA GENUINA.)

Read in the Section on Laryngology and Otology, at the Forty-fourth Annual Meeting of the American Medical Association.

BY O. M. WATERMAN, M.D.

MILWAUKEE, WIS.

LATE ASSISTANT TO PROF. JOHANN SCHNITZLER OF VIENNA.

The years from 1878 to 1888 having been remarkably fertile in the contributions of specialists to the subject of rhinitis atrophica fetida, commonly called ozena, the diligent observer is surprised to note how little has been written since that time about this not uncommon disease. After reviewing the articles from every standpoint, we come to the conclusion that the knowledge we possess of the etiology, as well as of the therapy, of the disease is a very uncertain one. Notwithstanding the abundance of material, scarcely two observers have come to the same conclusion; and the very praise of the different curative methods and medicinal agents now in vogue, none of which, however, have proved unquestionably successful, show the impotence of our present mode of treating the disease. Such facts are certainly discouraging; but those afflicted with ozena are so deserving of pity that new investigations, conducive to finding a cure for the trouble, are as much to be desired as they are necessary.

The views in regard to the character of the disease are widely differing, and while some maintain that rhinitis atrophica fetida is a condition consequent upon a simple atrophic rhinitis, others contend it is a morbus sui generis, and still many others hold that the predecessor of an atrophic rhinitis is always a hypertrophic one. The latter theory seems to be the one most acceptable, as I shall endeavor to show in the following pages. The opinions as to the constitutional character of the ailment differ also very materially, and while a number of pathologists distinguish only three: ozena tuberculosa, ozena scrofulosa and ozena luetica; (Seiffert of Wurzburg cites one hundred cases, collected by him, in which no constitutional anomalies could be detected, the majority of this number being persons of excellent general health); others, trustworthy observers like Schech and Bresgen, claim that dyscrasia and scrofulosis would beyond doubt be etiological factors; and Schech says he has never seen an otherwise healthy individual afflicted with ozena. To refute Schech's claim is hardly possible, in view of the fact that only a very small fraction of humanity can be considered absolutely healthy.

The literature from an anatomical standpoint is rather meager, the most explicit being the monograph of Zuckerkandl, "Normal and Pathological Anatomy of the Nose and its Pneumatic Appendices." He also presents the view that the atrophy of the mucous membrane and the turbinated bones is always preceded by a hypertrophic condition (Polypöse Wucherung) and that in the atrophy following, that of the bones is prevailing. He distinguishes different stages of atrophy, in the mildest of which only the turbinated bones appear thinner and more fragile, secondarily the size of the bone is reduced, and the free edge is no longer convex but plane or even concave, until, finally, of the bones so attacked, only a small projection remains. The external nasal walls are also affected by this atrophy, and frequently become so thin that the canalis palatinus descendens and the lacrymal nasal duct disappear. The nasal cavity gains so in size that in many cases the sphenoidal cavity, as well as the foramina ethmoidalia are visible. Zuckerkandl remarks further on the change of the fibers of the olfactory nerve that the lamella of the ethmoidalis is shortened, which is very important, as this lamella carries the branches of the olfactory nerve. He and Fränkel are of the opinion that rhinitis atrophica fetida is the sequel of a hypertrophic nasal catarrh, and as an indisputable proof he, Zuckerkandl, calls attention to the nine drawings in his book, all of cases where, in addition to atrophic changes, hypertrophic parts such as polyps or polypoid degeneration could be seen.

The findings of postmortem examinations made by E. Fränkel corroborate Zuckerkandl's opinion. Neither of these two give any clinical data, but Seiffert at the International Medical Congress at Berlin had a report of cases where he dissected parts of the furbinated bones with mucous membrane, from living subjects, and examined the same under the microscope. He defines two varieties of cases; those of simple rhinitis atrophica without fetor, and those of rhinitis atrophica fetida. In the former, he reports that the cylinder epithelium was sometimes intact, sometimes it was changed to different layers of cubic epithelium; change into pavement epithelium he found in none of these cases. The sub-epithelial

layers showed considerable infiltration of the cells. The condition of the secretory glands in some cases presented a normal appearance; in others they were infiltrated; and in still other cases the number of the glands was reduced. The increase in the connective tissue was so large that the degree of the atrophic change could be judged thereby. In the cases of the second class the microscopic examination gives quite a different result. In the cases only slightly affected, the cylinder epithelium was partly infiltrated with new cells; there were also present many layered pavement epithelium with a horny condition of the upper layers. In the severe cases the cylinder epithelium was entirely gone, and only pavement epithelium with a horny surface existed. Glands and connective tissue were degenerated or infiltrated. Of the blood vessels the veins were often considerably enlarged. Regarding the fetor, he thinks that the degeneration of the dead pavement epithelium is the most important factor causing it, microorganisms being only of secondary importance. Schuchardt sees the cause of ozena in the change of the ciliary epithelium of the nasal mucous membrane into pavement epithelium. He remarks that in a catarrhal condition of the ear, and also of the uterus, a transformation of the epithelium into pavement epithelium occurs and in consequence a fetor makes its appearance, quite similar to the one in ozena. Berliner came to another conclusion in regard to the etiology of ozena. He thinks the primary cause of the disease is the hypertrophic middle turbinated bone pressing against the septum, producing thereby stagnation of the secretion and successive atrophy of the mucous membrane. The fetor, Berliner thinks, is caused by the contact of the stagnated secretion with the atmospheric air and its microörganisms. H. Krause found the intima and E. Fränkel the adventitia of the nasal arteries obliterated. Moldenhauer claims that ozena is caused by the degeneration of the blood vessels supplying the nose. Zaufal thinks ozena is the result of a congenital malformation in the turbinated bones. I, myself, found in a microscopic examination of pieces of mucous membrane, taken from patients of the "Allgemeine Wiener Poliklinik," that the ciliated epithelium had undergone a change into layered pavement epithelium, and here and there a cylinder epithelium could be detected. Fibrillary connective tissue was abundant and also accumulations of cells, which contained fat corpuscles. In all probability these were cells of the mucous membrane, fatty degenerated. I found a moderate number of leucocytes.

I might mention here, the excellent article of Dr. M. Hajek, which deals with the miroörganisms of the nose. Among others he describes especially one, of which he made cultures. These bacilli ozenæ Hajeki emitted a penetrating fetid odor, similar to genuine ozena. Hajek himself, however, does not believe that this bacillus is the sole agent producing the fetor. Inoculation experiments gave a negative result.

Passing over now to the clinical analysis of the symptoms of the different stages of ozena, I found in but slightly affected cases, comprising the first stage of the disease, that only the mucous membrane of the inferior turbinated bone and the tissue intimately connected with it appeared atrophic, while the middle turbinated presented a hypertrophic condition. Crusts were abundant, especially in the posterior part; and the fetor was sometimes so intense, that full six hours after the examination of a patient it was still attached to my clothes. The mucous membrane is very much inclined to small hemorrhages and excoriations are quite frequently to be found. The patients complain of a dull heavy feeling in the head, and loss of smell, though both symptoms may be more or less wanting. Dryness in the nose and naso-pharynx are never missed, and in all cases the crusts cover in a measure the posterior walls of the pharynx. Examination with the probe shows that in this stage of the ailment, the already altered mucous membrane is tightly attached to the bone, which is itself not yet atrophied to any considerable extent.

After longer or shorter intervals follows the second stage; the pronounced atrophy of all parts affected. The inferior turbinated bone is now changed into a small glittering band and the middle turbinated is also much reduced in size. The whole nasal cavity is covered with greenish gray crusts, frequently mixed with blood, and on the posterior walls the condition is the worst. The sense of smell has entirely disappeared and the dryness is very disagreeable to the patient. The crusts reaching into the naso-pharynx keep up a constant irritation and especially in the morning an ardent desire to vomit is present. Because of the disgusting fetor the sufferer is shunned by society, and thus often the hope and ambition of the person afflicted is destroyed, so that a secondary psyichcal influence is of no rare occurrence, and melancholia and its consequences have been not infrequently observed in those suffering from ozena. It is worthy of remark that the disease attacks preferably the female sex. In seventy cases treated under my supervision, there were sixty-eight women and only two men. Considering this, and the result arrived at by Jurasz, that ozena patients exhibit a much stronger fetor during the time of menstruation, and further that in a large percentage of women suffering from ozena, catarrhal conditions of the sexual organs exist, we come easily to the conclusion that some relationship exists between the mucous membrane of the nose and that of the sexual organs.

How far the alteration of the ciliary epithelium into pavement epithlium is responsible for the creation of the fetor, I shall try to establish. A special agent creating the fetor I believe does not exist; the latter is rather the symptom of certain diseased conditions; and only under such circumstances does it appear reasonable that pathologists should speak and distinguish between ozena scrofulosa, ozena tuberculosa and ozena syphilitica; in other words, inflammation of certain parts of the nose upon a scrofulous, tuberculous or syphilitic basis. All these conditions are followed by ulcerative processes which in turn produce the putrid fetid crusts.

Somewhat different is ozena genuina, or rhinitis atrophica fetida. There is nothing remarkable about the hypertrophy, now well recognized as the first symptom.

Hypertrophic conditions of the turbinated bones of the nose are very frequent, and might exist for many years without any change for the better or worse. But in ozena genuina, atrophy, the second stage, soon appears, and the question naturally arises, Why does this change from hypertrophy occur only in certain individuals? The explanation is, I believe,

that in certain individuals, loci minoris resistenciæ exist which give a disposition to atrophic conditions. The case of the atrophy itself would be found in neurotrophic disturbances, which influence successively the different parts of the nose. Whether this degenerative process of nerve fibers exists during the hypertrophic stage, or occurs afterwards, is an open question for the present.

The first effect of the degeneration is manifested in the epithelium of the mucous membrane; the normal ciliary epithelium is changed into pavement epithelium and the glands which lack their necessary nourishment, undergo, in a great measure, a fatty degeneration. The nerve fibers of nervus profundus petrosus major, belonging to the sympaticus, share in the degeneration, which explains the vaso-motoric disturbances of which Frankel, Krause and Moldenhauer make mention. At length the bony part, not properly nourished by the blood vessels tributary to them, participates in the atrophic condition. Some one might ask here why all secretory glands do not become fatty degenerated or infiltrated; but S. Meyer proved in 1881 that certain nerve fibers in the peripheric system, having once perished, are regenerated, a fact which might well be considered in the premises. The sensory fibers supplying the nose belong to the trigeminus, and it is well known that after resecting them, the greatest trophic alterations have taken place resulting in inflammation and atrophy of all parts supplied by the respective nerve branch. Naturally the anastomosis between sympaticus and trigeminus plays an important part, as the peculiar riches in venous blood vessels of the mucous membrane of the nose is known; and that in rhinitis atrophica fetida the sense of touch is very much impaired all observers agree.

The pathologic secretion and its fetid order can likewise be easily explained in connection with the foregoing. The normal mucous membrane has, as has been said, undergone a process of degeneration, and by this process the ciliary epithelium was changed into pavement epithelium which covers the newly produced connective tissue. The pavement epithelium is unable to keep in a fluid condition the highly albuminous secretion which comes from the intact glands; it must have the effect of a foreign body on the pavement epithelium: it must irritate the same and dry upon it and disintegrate, coming as it does in contact with the external air and the microörganisms contained therein. The microörganisms have, as producers of the fetor, a secondary importance; a primary influence which Loewenberg believes they have is out of question.

Considering now the therapy of ozena genuina, I must say that a specific remedy for its cure does not exist; new remedies, greatly praised, sporadically make their appearance, but as quickly are abandoned. The cauterizing in this disease with chemicals as well as with the galvano-cautery is wholly to be condemned, although it is still practiced in a good many instances; for by cauterizing the surface we can not expect to revive an atrophied mucous membrane; on the contrary, only the remaining parts, which act normally, are destroyed, and we create in their place a cicatrized connective tissue.

Two fundamental principles have to guide us in our therapeutical efforts: 1, the indicatio causalis; 2, the indicatio symptomatica. To satisfy the former, we have to look for a constitutional anomaly, and if such is found in the form of anemia, scrofulosis, etc., it has to be corrected by internal medication with iron, iodin, arsenic or cod-liver oil; a change of air, or a suitable watering place is to be recommended. Attention must be paid to catarrhal conditions of the sexual organs of women, and such ought to be included in the treatment. The importance of constitutional treatment is easily recognized, if we consider that in cases where the mucous membrane is still partly intact the improvement in the physical condition, the richer condition of the blood, etc., will exert their influence upon nerve and other tissues to stimulate them anew.

The indicatio symptomatica must fulfill two conditions: 1, the removal of all old crusts and the prevention of the formation of new ones; 2, the removal of the fetor. Both conditions are intimately connected, but the majority of all medicinal curative agents considers the removal of the fetor; and that seems but natural, as the patient, whose sense of touch is very much impaired prays the physician to destroy the bad smell, everything else being of no paramount importance to him.

The remedies principally tried are those of the order of disinfectants; and every one has been tried carbolic acid, sublimate, salycylic acid, creolin, boracic acid, resorcin, iodoform, thymol and lysol; they all and many more have been used, but all with the same success; that is, with none. Some prescribed medication in powder form, others in solution, and still others preferred the insertion of medicated nasal bougies; yet I do not believe that a single caesof genuine ozena has been cured by the application of these remedies alone. Irrigations of the nasal cavities with disinfecting fluids might be used with advantage for disinfecting purposes, but they ought to be performed by the physician himself, as middle ear inflammations are not a rare occurrence if the instrument is used by unskilled hands. I have never observed that larger crusts could be dislodged by the use of the nasal douche or syringe; I always prefer an instrument called "Kornzange." Without any trouble I cleanse the nose of all crusts and, after having done this wipe the whole nasal cavity with a cotton tampon impregnated with a mild disinfectant fluid. This has to be done cautiously and without rubbing the mucous surface, in order to avoid bleeding or injuries to the mucous membrane. After the nose has been made dry, the second part of the treatment is attended to. This is the vibratory massage of the mucous membrane.

The first to try practically and advocate massage of the mucous membrane of the respiratory organs was Kelgren in 1888, although Heider in 1853 in a monograph, "Vibration as a Remedy and Diagnosticum," mentioned it. After Kelgren it was M. Braun who called special attention to massage of the mucous membrane, as a remedy in all diseases of the respiratory organs. Lately, Laker has described massage of the mucous membrane as a panacea for all diseases of the nose, pharynx and larynx, and claims to have made very remarkable cures with it. My own experience has not been so elating, as I have always been taught by it that an atrophic mucous membrane could never be changed into a normal condition; but where the atrophying process is not too far advanced, I must acknowledge that vibratory massage is the only rational treatment. By means

of the short vibratory movements, those parts of the mucous membrane which have a tendency to atrophy receive fresh stimulation, a further progress of the atrophic conditions is prevented, and the result is that the remaining healthy parts suffice to supply the secretory glands, keeping them intact.

The method of performing vibratory massage is very simple. A small cotton tampon, impregnated with disinfecting and, at the same time stimulating solution, is fastened to the end of a flexible silver probe conducted into the nose, and vibratory movements coming from the biceps muscles of the right arm, should strike every part of the nasal cavity to be reached. Care must be taken not to injure the mucous membrane, so as to avoid bleeding and consecutive excoriations. Every treatment ought to last from two to three minutes and must be repeated daily at least from four to six weeks, after which time it might be performed every second or third day. Until recently two formulæ have been used for the treatment of ozena patients at the "Wiener Allgemeine Poliklinik;" the first,

Iodi puri	0.4
Kali jodati	2.0
Glycerini	15.0

The other, Peruvian balm, in diluted condition. If either of the medicines was used alone the result was unsatisfactory; but with vibratory massage at the same time it was in a number of cases very encouraging. Some time last February I thought I would try a chemic product, peroxid of hydrogen, H^2O^2, used in America to clean out pus cavities, and I selected ten cases of rhinitis atrophica fetida for such trial. The history of these ten cases, eight of which exhibited good results (in the remaining two the remedy had to be discontinued by the direct wish of the patient), shows that further experiments in this direction are in order. I may mention here, that the treating physician has to pay attention to the quality of the peroxid of hydrogen. The preparation to be used has to contain ten volumes of H^2O^2 equal to three weights. With this solution, the cotton on the end of the probe should be impregnated, and the massage performed, and then the surface brushed slightly with

Sol. hydrogenii superoxid	20.0
Albolini puri	5.0

The physiologic action of the remedy fulfills the requirement in both respects; firstly it is a mild disinfectant and microbe destroyer, and secondly it stimulates the mucous membrane without irritating it. After a certain term of daily treatment as described above, the patient might be prescribed an etheric oil like ol. terebint, ol. citr., or ol. bergamott, of which he should put 5 drops in about a pint of hot water, cover the top of the vessel with a cloth, leaving only sufficient space for his face, and now inhale the ethereal oil energetically through his nose. Three times at intervals of five minutes each the oil should be added to the hot water, so that altogether 15 to 20 drops are used at each sitting. To repeat this procedure morning and evening suffices. This method is indicated, as ethereal oils set free H^2O^2. The patients willingly undergo this treatment, as it is agreeable and can be done at home. In harmony with the aforesaid, a faradic brush might be useful, but I have never tried it in my practice.

The following is the history of some of the cases treated according to the above described method:

Case 1.—Anna K., 18 years old, saleswoman, presented herself Feb. 4, 1892, for treatment of the nose. Patient had suffered for two years. For eighteen months she could not breathe through her nose; had pain in the temporal region changing from right to left now and then; these pains being constant, sometimes extended to the occipital region. For over a year the sense of smell was reduced, resulting after six months in complete anosmia. Since that time patient was able to breathe through her nose and only the bad smell, of which those surrounding her complained, compelled her to seek medical aid. Patient had menstruated pretty regularly for twenty-one months, the menstruation lasting two to three days. Examination: patient made the impression of a chlorotic individual. Physical examination of heart and lungs negative. The nostrils were not as large as usually found in ozena patients. The mucous membrane was covered with immense crusts, reaching from the apertura pyriformis to the choanæ. Great fetor. The lower turbinated right, as well as the left, was atrophic; the middle turbinated bone moderately hypertrophic. The mucous membrane was very fragile and had a tendency to bleed. Treatment: removal of crusts with "Kornzange," vibratory massage, tampons impregnated with iodin glycerin solution. After two months' treatment no noticeable change. After that, treatment with hydrogenium superoxidatum, as described. Two months later hardly any formation of crusts, the fetor considerably diminished and only at long intervals noticeable. Patient felt in every respect better and her sense of smell was very much improved.

Case 2.—Theresa Z., dressmaker, 42 years old; has had nasal trouble, to her recollection, for eight years. Sometimes unable to breathe through her nose. She could smell fairly well. Physical examination of heart and lungs negative. Examination of nose showed atrophic condition of the right lower turbinated bone, of which only a small projection remained; nearly the same on the left side. Middle turbinated hypertrophied more on the right than on the left. Large crusts from the anterior part of the nasal cavity to the posterior. Fetor very pronounced. Patient had since her first visit, been treated with peroxid of hydrogen as described, and after five days of daily treatments was so much improved that she presented herself only once or twice a week for inspection and treatment. This patient suffered from headache and palpitation of the heart. Both have disappeared. She had also a purulent blennorrhea, which improved since her nasal trouble got better. The mucous membrane in the naso-pharynx was moderately atrophic and patient complained of dryness and constant irritation. Here, also, vibratory massage and local applications of H^2O^2 mixed with 25 per cent. glycerin improved the condition. Internally sol. Fowleri.

Case 3.—Anna T., domestic; very anemic person; suffering for three years back from nasal trouble and neuralgia in frontal portion of her head; felt very weak and had spells of melancholia; she was unhappy because of the bad odor she emitted; she could not retain any position. The nasal examination showed atrophic surfaces of the mucous membrane, and here and there small hypertrophies were apparent. The interior parts of the nose were covered, like wall paper, with green and brown crusts extending into the pharynx. The fetor was horrible. Patient showed atrophy in lower and middle turbinated bones in a moderate degree. She was anosmic. This girl had been treated for six months by application with diluted Peruvian balm without apparent change, when I concluded to use peroxid of hydrogen and vibratory massage. After a daily treatment of two months, patient was better in every respect; even her mental condition was improved. The anemic condition was corrected by internal medication, arsenic in the form of Fowler's solution, and lactate of iron having been prescribed.

Case 4.—H. W., private; 18 years; very robust looking; had suffered from ozena for two years. Examination of the nose revealed the typical picture of the disease; the inferior turbinated were atrophic, the middle hypertrophic. Headache and anosmia not present. Patient had been treated with different remedies without satisfaction. For one week she was treated with H^2O^2. She claimed she felt no improvement and asked the physician in attendance to revert to iodin glycerin solution, with which she had been treated before.

Case 5.—Marie T., 19 years; private; suffering with what she termed chronic catarrh; three years ago became gradually anosmic and has nearly constant headache in the frontal region, also frequent attacks of palpitatio cordis. Examination of heart and lungs negative. Menstruates

since two years, but only one to two days' duration each time. Fluor albus. Neither conjunctiva nor gums appeared chlorotic. The people coming in contact with her had been complaining for five months of her smelling badly. Examination showed genuine ozena in moderate degree. After two months' treatment with hydrogenium superoxidatum, crusts and fetor had disappeared, the mucous membrane showed a nearly normal condition and the secretion, though thick, nevertheless, was liquid. Patient then came only once a week and used at home ol. citri., as described in the foregoing. Headache and palpitation were much better and she could smell nearly as well as before she had the trouble.

Of the remaining five cases, four showed marked improvement under the vibratory massage treatment, combined with peroxid of hydrogen applications; one case did not yield and the patient abandoned the treatment after two weeks' trial.

Summing up everything brought forward we come to the conclusion that:

1. Our knowledge of the etiology of genuine ozena is quite incomplete, and none of the hypotheses offered can be accepted unconditionally.

2. A so-called ozena syphilitica, ozena tuberculosa or ozena scrofulosa can not be brought into the same category with ozena genuina.

3. While the atrophy in ozena genuina is preceded by a hypertrophic condition, this hypertrophy is not the ordinary rhinitis hypertrophica chronica.

4. The cause of rhinitis atrophica fetida is neurotrophic alterations of certain peripheral nerve ends, sensitive and vaso-motoric.

5. The formation of crusts is caused by the change of ciliated cylinder epithelium into pavement epithelium, after the secretory glands have suffered by neurotrophic disturbances.

6. The origin of the fetor is to be found in the disintegration of the strongly albuminous secretion, which is exposed to the microörganism in the atmospheric air, the secretion acting as a foreign body on the altered mucous membrane.

7. No therapeutic attempt to cure rhinitis atrophica fetida is considered absolutely successful, but cauterizations are to be condemned.

8. The leading principle in treating the disease is vibratory massage, this promising the best results obtainable.

9. Peroxid of hydrogen is strongly recommended as a remedy at once stimulant, disinfectant and non-irritant.

10, 11 Loan Trust Building.

OPERATIONS ON THE NASAL SEPTUM.

Read in the Section on Laryngology and Otology at the Forty-fourth Annual Meeting of the American Medical Association.

BY H. HOLBROOK CURTIS, M.D.
NEW YORK, N. Y.

It was not my intention to dignify these observations with the name of a paper; I would prefer to call it an outline sketch to elicit a discussion upon a subject of interest to the Section.

If an experience of over two thousand cases of operation upon deviated septa constitutes a sufficient apology for my remarks I beg leave to make a few suggestions as to the modus operandi.

The questions one asks before operating, are:

1. Is the patient a bleeder, or is there a family history of hemophilia?

2. What is the condition of the patient's blood?

3. Is there a suitable reason for operating?

4. Does a gouty diathesis exist, or has the patient a secondary syphilis?

5. Is albumen present in the urine?

If the patient is a hemophile, the septum should not be touched if it can be avoided.

In no other locality of the body is persistent hemorrhage more difficult to control. If there is a question as to the blood state, the hematoscope or hematometer will settle it at once. Never operate in a case where there is shown to be less than 7 per cent. of oxyhemoglobin in the blood. We see many people who get along in comparative comfort through life with badly deflected septa. We should not interfere with a deflection unless there are reflex or direct troubles arising from the stenosis produced. Amongst these we may casually mention, chronic conjunctivitis, occlusion of the nasal duct, etc., or the induced respiratory affections as, chronic pharyngitis, laryngitis, trachitis, bronchitis, etc., or aural complications as, Eustachian catarrh, chronic otitis media, tinnitus and the like. In young persons the relief of a nasal stenosis is often an important factor in the cure of a long existing anemia, while in pulmonary affections, ofttimes including phthisis, the restored nasal respiration is frequently the beginning of a permanent cure. Ten years ago these views would have been considered empirical. To-day they stand as established facts, as undeniable as the axioms of geometry.

In secondary syphilis we must be careful not to operate until we are sure of healthy granulation tissue.

In three cases we have seen a severe attack of gout develop within three days after a septal operation on a gouty subject. In neither of which cases had there been an acute attack for several months. In diabetic patients and in Bright's disease, the severity of the constitutional symptoms must be taken into consideration, as well as the actual blood state.

Having decided that an operation is necessary, we may consider for a moment the preparatory and after treatment, as well as the manner of operating.

The necessity of treatment with a view of making a nostril aseptic is problematical, to say the least, for in nearly every case where trouble enough is being caused by the stenosis to warrant an operation, the accessory sinuses are continually giving off secretions laden with microbes which keep the nasal chambers in a more or less septic condition. In cases where a purulent ethmoidal discharge is present, we need not be deterred from operating on account of the presence of unhealthy pus, for experience shows that the nostril becomes so habituated, so to speak, to the poisonous surroundings that the wound is not apt to become infected. My experience in this has been authenticated by several observers with whom I have communicated on the subject.

Turbinate hypertrophies causing pressure, and erectile tissues should be treated before operation in order to enlarge the air space. The general health should be looked after and the blood put in as healthy condition as possible by internal exhibition of iron. Should we wish to remove a septal ridge for example; immediately before operating we use an antiseptic wash freely, then apply a thin layer of absorbent cotton, wet with a 10 per cent. muriate of cocain solution over the ridge, so that every part of the tissue to be removed is covered; we then allow the patient to wait for at least fifteen minutes before operating. In this way the least constitutiona

effect from the cocain is obtained and the most complete anesthesia. The wad may be molded over the deflection by means of a flat wire applicator. Such an applicator as is used for applying chromic or trichloracetic acid, which may be easily made by hammering flat the last inch of an eight-inch length of No. 14 copper wire. This wire fits in the handle of the ordinary laryngoscopic mirror, and may be put to various uses.

When ready for operation remove the wad, again spray the nostril with antiseptic solution, and by means of the flat probe bent conveniently at the end ascertain the depth of the ridge.

Usually the ridges are oblique ascending, according to the writer's classification.[1] Fix in your mind the direction of the floor of the nasal cavity. Operate from below upward in order that bleeding may

Curtis' Nasal Speculum. Modification of Kramer's Aural.

not obscure the field. If a trephine is used, always steady the head by the left hand, using a speculum in which the trephines will fit the groove of the lower lip, and never use a trephine with a lateral opening in the barrel. The opening for cleansing purposes should be behind the shoulder to prevent all possible jumping.

The Writer's Trephine.

In using a saw begin, if possible, from below and saw upward. The trephine leaves as flat a surface as the saw, provided the operator has sufficient skill in the use of the speculum as a guide—for by conjoined manipulation the surface may be *planed* perfectly smooth.

In case of profuse bleeding do not complete the operation until the first hemorrhage ceases, for in only rare cases does it come from but a single point, and the temporary plugging of the track of the trephine is a simple procedure. In ordinary bleeding the operation should be completed at once.

After the deflection is removed, allow the patient to hold the head over a basin, breathing through the mouth until the bleeding ceases. Try to preserve a clot over the wound, not washing afterwards, but carefully removing the blood from the floor in order to allow air to pass through the nostril, carefully preserving the blood clot. Usually in thirty minutes this is readily accomplished. Then blow a little aristol over the wound and direct the patient to remain perfectly quiet for a half hour. Never, if possible, leave any foreign body or plug in the nostril as a source of infection. Don't blow the nose for five hours, and then only gently. The following day direct the nostril to be sprayed four times, or every three hours with Dobell's or other antiseptic solution, and if possible covered with aristol. Too much fussing after operation is to be condemned. The best results are found in patients who go into the country the day after operation and have very little after treatment.

The great bugbear of nasal surgery is the possibility of hemorrhage, and in the treatment of hemorrhage the skill of the surgeon comes into play. My observations have led me to the following rules for controlling the same:

1. Find the bleeding point.

2. Introduce absorbent cotton, dusted with Monsel's salt, above the seat of bleeding. Then make downward forcible pressure with a straight Wagner sound against the floor of the nostril, to include laterally the bleeding vessel; if the bleeding is not controlled, pack with absorbent cotton upward, making pressure of the pack between the septum and middle turbinate to obtain pressure on vessels coming from above.

3. If bleeding resists these anterior packs, apply shawl straps about the thighs at the perineum, and small ropes or rubber tubing about the arms at the axilla and draw up tightly, though not tight enough to interfere with the arterial supply, our object being to stop the venous return. This will usually stop the hemorrhage within two minutes. Care must be taken when each extremity becomes cyanosed and mottled, to loosen its strap gradually, and when relieved, tighten it up again, keeping one arm and one leg strapped, while the others are being relieved in this manner. By means of this simple method the awful results of post-nasal plugging may be avoided. Since devising this means I have never had to employ the post-nasal plug.

[1] See Nasal Stenosis, Rep. 9, International Medical Congress.

A NEW PATHOLOGY AND TREATMENT OF NERVOUS CATARRH.

Read in the Section on Laryngology and Otology at the Forty-fourth Annual Meeting of the American Medical Association.

BY SETH SCOTT BISHOP, M.D.
CHICAGO.

An excess of uric acid in the blood causes nervous catarrh (hay fever). Attacks can be stopped, by precipitating the excess of uric acid from the blood by rendering the latter less alkalin with an acid treatment. Attacks can be prevented, by reducing the amount of uric acid in the body to the normal, and maintaining it there.

Uric acid exists in the blood in the proportion of about 1 to 33 of urea in health. When this proportion is disturbed by a relative increase of the uric acid, certain disturbances of a vascular and neurotic character arise. The effects of uric acid in producing these disturbances have been the subject of an extensive and interesting series of experiments by Alexander Haig. For years he was a sufferer from migraine, and studied in his own person the relation of uric acid to the production of attacks of this disease, and the effects of anti-uric acid treatment in subduing attacks, and of diet in preventing them. I desire at the outset to acknowledge my great indebtedness to this painstaking observer for many of the facts adduced in this paper.

First, let us consider what the effects of an excess of uric acid in the blood are. The disorders of the nervous system, that Murchison associated with lithemia are: aching pains in the limbs, and lassitude; pain in the shoulder; hepatic neuralgia; severe cramps in legs; headache; vertigo and temporary dimness of vision; convulsions; paralysis; noises in ears; sleeplessness; depression of spirits; irritability of temper; cerebral symptoms and typhoid state.

Haig maintains that the presence of uric acid in excess accounts for the exacerbation of pains in rheumatism and gout, and he even contends that these diseases are primarily due to the action of this acid on the brain, the spinal cord, or the solar plexus of nerves. In persons suffering from intense pruritus, uric acid and the urates have been found in excess.

Ebstein believes that uric acid deposition acts as an excitor of inflammation in the tissues in which it is deposited.

Quinquaud studied the effects of uric acid on the skin. He administered three to six grains a day to the human subject. The most common results were boils, and patches resembling eczema, the dermal analogue of coryza.

Thomas J. Mays attributes attacks of angina pectoris to "the increased formation of uric acid, which is incidental to the gouty and rheumatic diathesis." He agrees with Haig in attributing migraine to the irritating effects of uric acid.

Conklin details a number of well-marked cases of nervous, mental, nephritic and other diseases, that support the proposition that they are the result of the action of uric acid.

N. S. Davis, and others, add the following to the list of manifestations of uricacidemia: loss of appetite; nausea and vomiting; flatulent indigestion; diarrhea; intense itching; asthma; blindness; deafness; numbness of the skin, and creeping sensations; hyperesthesia and pain in the skin; impaired memory; melancholia; delirium; epilepsy and coma.

Observe the symptoms of uric acid irritation that are closely allied to paroxysms of nervous catarrh: asthma; intense itching; over-sensitiveness, and other nervous disturbances of the skin; neuralgia; sick headache; irritability of temper, etc. The first three symptoms often characterize attacks of nervous catarrh, and highly moral persons, like the late Henry Ward Beecher, are seized with an almost irresistible impulse to accompany their storms of sneezing with a shower of profanity. Sick headache sometimes alternates with these attacks, and at other times takes the place of them.

While suffering from migraine, Haig found the uric acid increased to the proportion of 1 in 20 or 25 of urea, whereas before and after attacks he found it as 1 to 40, and the headache was proportioned to the excess of uric acid over the urea, and not to the amount of alkali used to bring the uric acid out. The mental condition varied directly with the relative amount of uric acid in the urine. The excretion of the acid was greatly diminished before the attacks, i. e., during mental exaltation.

I have learned while writing this paper, that Leflaive analyzed the urine before and during attacks of hay fever, and found uric acid in great quantity just before the attack, and half that quantity during the attack. Some of this may have been washed out of the system through the profuse perspiration that occurs during the violent sneezing.

Haig says: "Uric acid in the blood contracts the arterioles and capillaries all over the body, producing the cold surface and extremities, raising tension of pulse and, according to Marey's law, that pulse rate varies inversely as the arterial tension, slowing the heart. Headache is a local vascular effect of the uric acid. Excretion of this acid may even explain the mental depression and irritability, and their results in the excess of suicides and murders in July. There is an excessive excretion of this acid in the warm months, and a minus excretion in cold weather. During plus excretion there will be high arterial tension with anemia of the brain, bad temper, etc. At this time a dose of acid would free the brain circulation from the power of the uric acid and produce, as Roy and Sherrington have shown, an increase in its size, and a free flow of blood in its vessels."

Peiper says that alkalescence of the blood is diminished in all fevers. Corroborative of this, Haig found during an attack of influenza in 1890, that there was a rise in the acidity of his blood, urine and tissue fluids, thus driving the uric acid out of these fluids, diminishing its excretion and causing its retention in the body.

Bertillon says that suicides increased 40 per cent. in France after the influenza epidemic. This may be accounted for by the accumulation of uric acid in the body during the diminished alkalinity of the blood, and when the blood regained its normal alkalinity the stored acid was taken into the circulation and produced its characteristic irritability and depressing effects.

In health, about five to eight grains of uric acid are secreted every twenty-four hours, and it is readily soluble in the blood, which is slightly alkalin. If there is increased formation of this acid no harm results, so long as it is promptly eliminated and the ratio between it and the urea is not disturbed.

Haig found that by diminishing the alkalinity of the blood he freed it from uric acid, relaxed the arterioles, relieved headache and mental depression. Increasing the alkalinity, increased the acid excretion, contracted the arterioles, slowed the circulation of the blood and caused languor, depression, headache and, in epileptics, a fit. Epilepsy, migraine, spasmodic asthma, etc., are, like neurotic catarrh, functional nervous diseases. What Haig says concerning epilepsy and migraine may be affirmed of asthma and nervous catarrh: "They may come on early in life, last for years, or the whole of life, tend to recur at more or less regular intervals, are met with in members of the same family, may afflict one and the same patient—now a fit, now a headache—alternating or together. Epilepsy and headache, gout and rheumatism are very commonly met with in the same family."

Broadbent thinks that the convulsions of epilepsy are brought on by the slowing of the circulation, and consequent cerebral anemia, in the same way as convulsions after great hemorrhage. As we have seen, the effect of an excess of uric acid in the blood vessels is to contract them, which, in the vessels of the brain, produces cerebral anemia. This condition appears to obtain in nervous catarrh, and the attacks are relieved by such remedies as nitrite of amyl, etc., which relieve anemia of the brain.

This uric acid theory of nervous catarrh is not antagonistic to the present status of medical opinion or surgical treatment, but on the contrary, explains questions that were inexplicable before. As a tumor or hypertrophied bone may give rise to convulsive seizures in epilepsy, and as its removal may be followed by relief, when no other structural cause exists, so in nervous catarrh, where new growths and other lesions of the nasal mucous membrane are present, the attack may be started by the accumulation, and

the suddenly setting free of uric acid. This precipitates the paroxysm by its irritant action, which finds expression in the group of symptoms characteristic of nervous catarrh or asthma, instead of some one of the other allied diseases. The particular form of manifestation may be determined by the growth, or seat of irritation, located in the nasal cavities. Where this is the only determining factor of the nature of the morbid symptoms, no other organic disease having resulted from the long-standing trouble, the removal of such a peripheral source of irritation may give relief from these symptoms, but it may not prevent the uricacidemia from switching off into other kindred lines of disturbances, if it be not corrected.

This uric acid theory makes clear the reasons why some persons suffer from attacks of nervous coryza under certain favorable conditions in winter, as well as during the warm months. It also unifies all the various forms of hay fever. They are all variations of nervous catarrh.

Patients of this class are sometimes affected more or less by functional aphasia. Haig's father suffered from time to time for a large part of his life from this trouble, and in old age had organic aphasia with right hemiplegia. The same functional disturbance afflicted Haig very markedly, at times of excess of uric acid in the blood, with mental depression, lethargy and headache. The histories of such cases are paralleled by the histories of nervous catarrh in many families.

The periodicity of nervous catarrh has a counterpart in migraine that comes once in every seven, ten, fourteen or thirty days for years or for life. It may last one day or less, rarely two, and is worse in the morning.

In the last published paper of the late A. Reeves Jackson he expressed his convictions that various neurasthenic symptoms, sleeplessness, headache, vertigo, neuralgia, muscular twitchings, vaso-motor disturbances, vague pelvic symptoms, etc., are dependent really upon the lithic acid diathesis. He wrote: "If this fact were duly recognized it would remove some of the cases from the list of those which are an opprobrium."

L. C. Gray says: "Influenza, ague and other fevers store up uric acid in the body."

There are several causes that determine the manner in which the irritation produced by an excess of uric acid may express itself. These are central, peripheral and hereditary causes. "The structure of the nerve centers and the distribution of its vessels not only determine the kind of disturbances which uricacidemia will produce in any given case, but also explains why one individual suffers in this way from functional nervous disorders, while another with about as much uric acid in his blood and body escapes. When the nervous system is depressed by fatigue, deficient food, etc., a smaller amount of uric acid in the blood will suffice to produce disturbance of function than at other times. If uricacidemia is prevented, the nervous system will not itself originate disturbances. This knowledge of the effects of lithemia gives complete power to produce or remove the vascular conditions, and the nervous disorders which are secondary (consequent upon) these conditions, by proper diet and treatment." (Haig.) The arguments that apply to migraine are just as forceful in the case of nervous catarrh. The peripheral causes, neoplasms, hypertrophies, etc., have already been considered.

Heredity is probably the chief factor in determining the direction in which the uric acid diathesis will afflict an individual, whether it result in migraine, angina pectoris, asthma, nervous catarrh or some other neurosis; but undoubtedly accidental or acquired conditions may act as directing or localizing agents. For example, of the latter class: a student who is predisposed to such a neurosis accidentally inhales the fumes of burning phosphorus in the laboratory, and this excites the first attack of his nervous disorder, which naturally under these conditions takes the form of asthma. On the other hand, many attacks of severe cold, or some injury to the nose, or the development of a polypus, may determine the nasal form of neurosis, or nervous catarrh. I have such cases in mind.

I believe we can produce and control attacks of nervous catarrh at will by treatment and diet, the same as we can migraine. I was first led to experiment with an anti-uric acid treatment of nervous catarrh by my endeavors to find a solution to the problem, why paroxysms of this disease attack sufferers regularly in the morning. These attacks come on about the same time, morning after morning; although the previous afternoon and evening may have been free from suffering, and the night one of restful repose, with no direct access of dust-laden atmosphere from without, and no change in the contents of the sleeping apartments. The following facts appear to answer this question: the blood is the most strongly alkalin between the small hours of the morning and 9 A.M., when it reaches its greatest alkalinity. The more alkalin the blood, the more freely soluble is the uric acid. Therefore, in the morning hours the blood is the most heavily charged with this irritant, and during these hours patients suffer the most from angina pectoris, migraine, asthma, nervous coryza and other functional nervous disorders.

The blood is the most acid during the hours of bodily activity, and it reaches its maximum of acidity about midnight. During this time there is only a small secretion of uric acid, and the amount circulating in the blood is minute. As the blood begins to increase in alkalinity in the morning it dissolves the uric acid out of the more alkalin tissues in which it has been stored, the liver, spleen, cartilages, joints and fibrous tissues, and with the increasing alkalinity and solvent properties of the blood it becomes rich in uric acid until it produces the drowsiness, heaviness or other nervous phenomena peculiar to any given case.

ABORTIVE TREATMENT.

With these facts in mind, I attempted to break up the morning attacks of sneezing and nasal stenosis, by doses of acid at bedtime and on first awakening in the morning. The experiment was a success. A series of wretched mornings was followed by freedom of respiration and a sense of well being that seemed like a physical millennium. After this result of preventing the morning increase in the alkalinity of the blood, in order to prove the correctness of my deductions, I used an alkalin treatment, and was both delighted and disgusted with the results. The old enemy raged again, but here was clinical proof of my first proposition. I have successfully repeated these experiments until I am satisfied of the correctness of these conclusions.

The first acid I used for these experiments was the dilute sulphuric acid in doses of twenty or thirty drops in water, but on account of the griping pains and diarrhea that it produced in the early morning, I was obliged to substitute another. It occurred to me to try Horsford's acid phosphate that I had used for other purposes some years since, on the recommendation of the late Dr. Jewell. I used teaspoonful doses of this without any ill effects, and with the result of giving complete immunity from suffering. One or two teaspoonfuls in a glass of water at bedtime, and on first awakening in the morning were sufficient to break up the habit entirely. In a few days after the symptoms ceased to appear in the morning, this dose was omitted. The night dose was continued until the habit seemed to be entirely broken up. If any nasal irritation reappeared, a dose or two would dispel it. By adding sugar to this acidulated drink it makes an agreeable lemonade, but it is better to avoid the sugar, and as much as possible all other uric acid-producing substances.

While I have depended on the mineral acids to keep down the morning alkalinity of the blood, Bence Jones claims that citric acid (lemonade) will accomplish the same result. I have made it a point to have the morning dose well diluted with water, for the purpose of starting perspiration, for I have observed that as soon as a patient has sneezed violently enough to produce free sweating, the symptoms either decreased or disappeared. The sweating carries off uric acid and helps to free the blood.

I am aware of the differences of opinion that exist concerning the influence of an excess of dilute phosphoric acid on the elimination of uric acid, the effects of acid on the tubules of the kidneys, and the relation of a meat and vegetable diet to the formation of, uric acid; but I am careful to use only so much acid as is required to prevent the maximum of alkalinity from occurring. The acid is used, not with the expectation of eliminating, but of clearing the blood of uric acid, for the purpose of preventing attacks during the season of suffering. If the over-wrought nerves are relieved from this source of irritation, they are much less likely to respond to other excitants, and if the morbidly susceptible condition of the nervous centers is due to the action of the uric acid, its over-sensitiveness to all excitants may be relieved by correcting the uricacidemia. After relieving the suffering with the acid phosphate, I have produced it again by neutralizing the acid with an excess of bicarbonate of sodium, and employing the usual doses. This converted the acid into a ready solvent of uric acid, flooded the blood with it and produced the attacks. In turn I have followed this up with the acid, relieved all the catarrhal symptoms by precipitating the uric acid from the blood into the tissues and produced the characteristic gouty pains. Again, by substituting drachm doses of phosphate of sodium for the acid, I have precipitated all the symptoms of a severe nasal catarrh.

Some other remedies produce effects parallel to the acid treatment. Nitro-glycerin, nitrite of sodium, nitrite of amyl, antipyrin, etc., have a similar effect. Opium raises the acidity of urine, diminishes the alkalinity of the blood and reduces the amount of uric acid. It relaxes the arterioles and improves the circulation of the brain. Iron and lead have a similar effect. Mercury reduces the excretion of uric acid, reduces tension of pulse and produces diuresis. If opium is used the ill effects that follow should be prevented by following up its use with salicylate of soda for a few days to free the system of uric acid. Quinin, so generally used is contra indicated, for according to Quain, it brings uric acid into the blood.

There is one remedy that has proved in my hands invariably unfailing in giving relief, especially when given at the beginning of an attack of nervous catarrh, or common colds. It is for temporary use only, like the acid treatment. I have employed it for the last twelve years or more, and published it a number of times, but in this case it is, like old wine, the better for age. I refer to a combination of atropia and morphia, in the proportion of 1 part of atropia to 50 of morphia. The ordinary adult dose is from one-sixteenth to one-eighth of a grain of this mixture, according to the severity of the attack. It may be repeated in an hour or two, if the first dose does not entirely relieve the sneezing, running at the nose and stenosis. I do not believe it has ever failed to stop an attack when properly adapted to the case. No person has ever acquired the drug habit through my prescribing it. I never write a prescription for it, nor allow a patient to know the composition of the remedy, not for mercenary purposes, for I have more often given it away than I have charged for it, but in order to obviate the possibility of being responsible for a drug habit. The morphia clears the blood of uric acid, diminishes the nervous irritability, suppresses over secretion from the muciparous glands and stimulates the circulation and activity of the nervous centers, while the atropia elevates the tone of the blood vessels, quickens the pulse, decreases all the secretions except the urine, sustains bodily temperature, stimulates the respiratory center, counteracts the constipating effects of the morphia and acts as an antispasmodic.

LOCAL SELF-TREATMENT.

The most useful self-treatment I have found is, first, the use of a convenient pocket inhaler that I have devised for patients who take cold easily. It is called the camenthol inhaler. It can be used in an inconspicuous and expeditious manner in public places where it would be impracticable to combat a sudden seizure with other and slower measures. Several gentle, prolonged inhalations should be taken through one nostril while the opposite one is closed, until the irritation is relieved.

The breath should not be allowed to pass back through the inhaler, but through the mouth instead. The camenthol inhaler does not become irritating to the membrane, like menthol alone, after having been used a considerable time. It is blander and more soothing than the menthol crystals, iodin or carbolic acid. When the throat is involved, it can be inhaled through the mouth for throat treatment. Second, for home treatment morning and night, I usually prescribe a solution of camphor-menthol in lavolin or benzoinol to be sprayed into the nostrils and throat. The 1 and 3 per cent. solutions are most satisfactory. It is best to begin with the weaker, and increase gradually to the 3 per cent. solution.

PREVENTIVE TREATMENT.

This treatment can not be undertaken to advantage during the season of attacks, except so far as relates to diet. Haig does not believe that excessive uric acid formation takes place, but from a considerable study of this subject, I am forced to the conclusion that an excess of uric acid in the system is not due alone to continued retention and storage of the small normal overflow by the renal vein, but to an increased formation also. In a conversation with Dr. N. S. Davis a few days since, that eminent authority corroborated the latter view. It follows, then, that it is necessary to reduce as much as possible the use of those foods that increase the actual formation of uric acid, such as meats, sweets, beer, wine, etc., and limit the diet largely to fruits, vegetables, milk, fats, etc.

Exercise also aids in the excretion of uric acid, although there may be an actual increase in the amount of acid. Lange treats periodical mental depression successfully by reducing the amount of food and by systematic exercise.

A diet of milk with occasional very small quantities of egg and fish, with no other animal food, will prevent suffering from sick headache entirely, without medicinal treatment. With this diet the natural ratio between uric acid and urea—1 to 33—is maintained. Haig claims that by a uric acid-producing diet one can store up in the body several ounces of uric acid in a few years—or by correct diet, not as many grains. He has been on such a diet over eight years with almost never a headache. By eating meat and drinking wine two or three days in any single week he is sure to bring on the migraine.

A course of salicylate, salicin, lithium, etc., will remove the excess of uric acid. If an alkali is given it is likely to produce uricacidemia and precipitate an attack of the trouble we are endeavoring to prevent. For an attack, then, a dose of acid should be given to free the blood of uric acid, then the salicylate of sodium should be given for two or three days, or longer, to sweep it out of the body, but the salicylate should not be given during the attack, for it may aggravate the symptoms. For a fortnight, or a month, perhaps longer, preceding the regular season of attacks of nervous catarrh, from two to six grains of the salicylate should be given every day or two, in order to get and keep the amount of the acid in the body down to the normal amount. The copious use of the stronger lithia waters is advantageous also.

This treatment, combined with proper diet, should be successful, provided that there is no organic disease of the structures, central or peripheral. Any organic disease, hypertrophy, polypus, etc., must receive the necessary surgical treatment. A vitiated condition of the blood, or a depressed condition of the nervous system must be corrected. Excesses of every nature must be avoided. All the organs of the system should receive such attention as to secure the harmonious coördination of their functions, for this treatment is directed against uricacidemia only, as a cause of suffering, but it should not be forgotten that there are other causes that may operate to produce attacks, just as in the case of spasmodic asthma arising from bronchitis, irritating gases and other excitants.

I am of the opinion that with the new theory, therapeutics and proper diet of this disease, the medical profession need no longer say to hay fever patients in a patronizing way: Suffer little children, for of such is the kingdom of heaven; but we must recognize and combat the uric acid diathesis if we would bring comfort to these patients and obliterate a stigma that dims the luster of our great art.

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LEGISLATION IN THE UNITED STATES FOR THE PREVENTION OF BLINDNESS.

Read in the Section on Ophthalmology, at the Forty-fourth Annual Meeting of the American Medical Association.

BY LUCIEN HOWE, M.D.

BUFFALO, N. Y.

At the meeting of the American Ophthalmological Society in 1887, I presented a short article in regard to the increase of blindness in the United States, calling attention to the fact that according to the census reports, the number of blind in this country was increasing much more rapidly than the population. The Society was kind enough to appoint a committee to examine into the subject, as did also the Medical Society of the State of New York, after the same figures had been presented there for consideration. The committees in both of these Societies reported the advisability of some legislation to limit the further increase of what may be considered one of the principal causes of blindness, namely, ophthalmia neonatorum. Since that time, the States of New York, Maine and Rhode Island have all passed laws which have for their object the preventative treatment of this disease, and I wish here to show the desirability of similar laws in other States.

The facts in regard to the subject were published in the Transactions of the New York State Medical Society and of the American Ophthalmological Society so completely that there seemed but little to add to the subject. Since then, however, the statistics gathered by the census of 1890 have been obtained, and these furnish sufficient additional data to warrant my calling attention to the subject again, and recapitulating briefly the reasons why legislation in various States should be enacted for the prevention of blindness.

In 1880, for the first time, a systematic attempt was made to ascertain the entire number of the defective classes—these among the rest—and when the statistics for that year were compared with previous years the apparent increase was astonishing.

When, however, the number of blind in 1890 is compared with the number in 1880, we find that there is an increase of only 3.20 per cent., there having been in 1880, 48,929 blind and in 1890, 50,411. There are good reasons, however, for considering that this last census gave a much less complete record of such persons than did the census of 1880. I am indebted to Hon. Robert D. Porter for a typewritten copy of the returns concerning the blind taken June 1, 1890. The summary shows that there is a total of 50,411. Male, 27,983; female, 22,458; white, 43,351; colored, 7,060; natives, 41,265; foreign, 9,146.

In some States this increase has been very slight; in others quite marked. But whether the number is large or small, the important fact remains that a really large percentage of the blindness is caused simply by neglect in early childhood. I mean, as a result of ophthalmia neonatorum. It is difficult to

estimate exactly what percentage these cases bear to the total number of the blind, but various authorities estimate this from nine and one-half to ten per cent. or even more. In other words, on examining the figures carefully, we can say that without fear of exaggeration there are wellnigh five thousand blind in the United States, who are in that condition merely because of neglect on the part of those who had charge of them in early infancy. If the estimates were based upon the number of blind in asylums the percentage would be almost twice as large, as has been proved by an examination of a large number of inmates of the blind asylums, not only in this country but also in Europe. The details of this are referred to in the papers already mentioned, and the facts can be easily substantiated by reference to the works of Fuchs, Magnus and others. On an average it may be stated, with a considerable degree of accuracy, that at least eighteen and one-half or nineteen per cent. of all the blind in early life are in this condition from ophthalmia neonatorum.

This fact would bear statement in detail were it necessary, or were it in accordance with the limit proposed for this short communication. Another fact which I would mention is one which also can be briefly stated before a society of those accustomed to treat ophthalmia neonatorum. This is, that ophthalmia neonatorum can now be considered a preventable disease. I need not elaborate this by calling your attention to the figures presented by Credé and others, or by referring to my own experience, or that which occurs in the practice of every one who has to deal with this disease. We all know how favorable a prognosis can be given in the early stage, and on the other hand we know how extensive are the ravages which may follow after ulceration of the cornea has once begun. All agree, I think, that when these cases are seen within the first week after birth a generally favorable prognosis may be given.

This brings me to the next point which I wish to make: that is, the desirability of legislation which should force nurses and attendants to bring these children to the notice of practitioners while the disease is still in the very earliest stage. The story is a familiar one of the infant being brought to the office of the oculist, with the cornea ulcerating or perhaps perforated, and the mother and sometimes the attending physician thinking that the child has "taken cold" and requires perhaps no further treatment than the hot water or milk which has been applied to the eyes. And the scene, also, is unfortunately familiar, of the mother weeping over a hopelessly blind child, all simply because the nurse has supposed that the infant has merely taken cold and had been relying upon some of the numerous household remedies just a little too long. The question before us, therefore, is what means can be adopted to bring these children as soon as possible to the notice of a competent physician. Education of the laity is useless. Urging the nurses, professional or others, is equally insufficient. It remains only to place the responsibility at once where it belongs, by imposing upon such persons a severe penalty. The surest and best means of accomplishing this is undoubtedly by legislation.

This was the view taken of the subject by those who have considered it most carefully; and following the plan which had been partially adopted before in Switzerland, and elaborating it, a concise but explicit bill for the proper protection of these infants was passed by both houses of the New York Legislature, 1890, without a dissenting vote, and became a law. The law was known as Chapter 41 of the laws of 1890, and was as follows:

AN ACT FOR THE PREVENTION OF BLINDNESS.

SECTION 1.—Should any midwife or nurse having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened at any time within two weeks after its birth, it shall be the duty of such midwife or nurse so having charge of such infant, to report the fact in writing, within six hours, to the health officer or some legally qualified practitioner of medicine, of the city, town or district, in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this Act, shall be punishable by a fine not to exceed one hundred dollars or imprisonment not to exceed six months or both.

SEC. 3.—This Act shall take effect on the first of September, eighteen hundred and ninety.

My own impression is that this law was sufficient to cover all cases, and a sufficient number of convictions could have been obtained under it, not only to call public attention to the existence of the law, but also to prove a wise and very excellent lesson to the class whom it was practically to affect. A few convictions would have more effect in educating the laity and those who pretend to be nurses than would any number of lectures, leaflets or appeals of any kind. One or two partial attempts were made under that law to bring nurses to trial in New York city, especially by Dr. Derby of the New York Eye and Ear Infirmary. He thought, however, that a loophole was left by the word, "notice," because nurses would be apt to say when placed on the stand that they had not noticed any such redness of the eyes or discharge from them. This is such a small excuse that it ought not to prevent the working of the law as there presented. Another objection to this, was that it was not quite strong enough, and not being a felony, it might be difficult to place the responsibility on the proper person for beginning a suit.

The matter, therefore, was taken in hand by Hon. Elbridge Gerry, who for many years has identified himself with legislation for children. The substance of this law has been incorporated in another, known as Chapter 325 of the laws of New York for 1892. The clause in regard to this reads as follows:

. . . Being a midwife, nurse or other person having the care of an infant within the age of two weeks who neglects or omits to report immediately to the health officer or to a legally qualified practitioner of medicine of the city, town or place where such child is being cared for, the fact that one or both eyes of such infant are inflamed or reddened, whenever such shall be the case, or who applies any remedy therefor without the advice, or except by the direction of such officer or physician, etc.

It is further provided that this is to be punishable as a felony.

We can, therefore, consider that in New York we have a law sufficiently stringent to teach nurses and midwives what their duties are, and parents what risks their children run when there exists what is ordinarily called a simple "cold in the eyes." It is important that the first cases should be so clear as to make conviction a practical certainty and in my own vicinity, at least, some cases of probable guilt have been allowed to pass unpunished. But it can only be a question of a short time before a good typical violation of this statute comes under some one's notice, and after having been once tested subsequent convictions will be easy.

The State of Maine was the second to pass such

a law. There the matter was taken in hand by Dr. Holt of Portland, with his associates. The bill was known as number 97 of the Senate, and has become part of the laws of 1891. The text is as follows:

SECTION 1.—Should one or both eyes of an infant become reddened or inflamed at any time after birth, it shall be the duty of the midwife, nurse or person having charge of said infant, to report the condition of the eyes at once to some legally qualified practitioner of medicine of the city, town or district in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3.—This act shall take effect on the first day of June, eighteen hundred and ninety-one.

The third State to have such a law was Rhode Island. In that State the subject was brought to the attention of the Legislature, principally through the exertions of Dr. F. T. Rogers. That was passed at the January Session of 1893, and the text is as follows:

SECTION 1.—Should any midwife, or nurse, or person acting as nurse, having charge of an infant in this State, notice that one or both eyes of such infant are inflamed or reddened, at any time within two weeks after its birth, it shall be the duty of such midwife or nurse, or person acting as nurse, so having charge of such infant, to report the fact in writing, within six hours, to the health officer or some legally qualified practitioner of medicine of the city or town in which the parents of the infant reside.

SEC. 2.—Every health officer shall furnish a copy of this act to each person who is known to him to act as midwife or nurse in the city or town for which such health officer is appointed, and the Secretary of State shall cause a sufficient number of copies of this act to be printed, and supply the same to such health officers on application.

SEC. 3.—Every person who shall fail to comply with the provisions of this act shall be fined not exceeding one hundred dollars, or imprisonment not exceeding six months, or both.

SEC. 4.—This act shall take effect July 1, 1892.

It will be observed that the three laws now in existence are very similar, and as that of the State of Maine omits the word "notice," and is still complete in itself, it is perhaps the best thus far enacted, except that the penalty is too light.

A question might arise as to what advantage it is to oblige nurses and midwives to report to physicians a disease of which a certain class of so-called doctors are almost as ignorant as the nurses themselves. The answer to this is three-fold:

1. The nurse is made to appreciate her responsibility, not only in that case but in others, and to know that the condition indicated by the redness and discharge is not anything to be trifled with.

2. The parents also become alarmed when they know that the disease is sufficiently serious to be the subject of special legislation, so that in choosing a practitioner they select with rather more than ordinary care.

Finally, as for the physician himself. If he accepts the case he feels that he must understand it thoroughly and he will be apt to look it up with considerable care in his text-books and treat it intelligently. Above all, if he fails to do that, the parents have a responsible individual against whom they can with perfect justice enter a suit for malpractice, and if he has proved himself incompetent he not only suffers the penalty which a law has provided for him, but one such case would be an example to him and to other practitioners in the community in which it occurred.

It seems needless to urge further the advisability of similar laws in other States, especially in those where there is a large proportion of foreign emigrants in the population. We know that their children are not only often cared for by midwives, but also often given over to them entirely at an early age, and women when accustomed to assume any such responsibility must be taught this part of their duties. If they will not learn in any other way, a heavy fine or imprisonment is but a small penalty for the crime of having blotted out the sight of a human being. Where the German population is large the children are often cared for entirely by midwives and these, though usually well qualified by instructions obtained in their native countries, are also not infrequently ignorant and careless in the extreme, and need to be taught that the hand of the law may interfere for the protection of the children given into their charge.

Having shown that such legislation should be enacted, and that it is our duty to lend our efforts and personal influence to obtain it, I wish to say, finally, that it can be done usually with little effort. Of course in any such undertaking it is necessary to enlist the sympathy and coöperation of a few leading men in each branch of the Legislature—those whose standing and character is such as to command respect for any measure which they advocate. The personal coöperation of the Governor is also a warrant of success from the first. But the average legislator is ready to listen patiently to any such claims of an unfortunate class, and his assistance for the bill is not difficult to obtain, being certain, as he is, that the originators of it have only the best motives. If the politicians hesitate or are inclined to smile at measures for the relief of sore-eyed babies they are quickly brought to their senses, if confronted by such evidence as is unfortunately always at hand in every large city, or can be easily obtained among the inmates of every asylum for the blind. Such men realize that they have with them the hearty approval of their constituents, of the press, and of the people, and that they are saving from a life of misery, to which death is often preferable, a large class of those who would otherwise be hopelessly blind.

DR. GOULD—I would like to ask has this Association, as an Association, taken any action by which we can urge upon the part of the Legislature the passage of such a law? Would it not be well for us to take this action now, either by appointment of a committee or in some other way? I think this is a very important subject, and one on which we should take some action very soon. I will ask that the Association at once appoint a committee, whose names would give character to the work. Such an action would be a very great credit to the Association.

DR. WILLIAMS—During last winter I was a member of the Legislature of my State. While there I procured the enactment of an important law, which in substance is: the midwife or nurse having charge of a newly born infant, who may have any inflammation or disease of the eyes within two months after its birth, shall report the case to the city or county physician, who is required to visit the child immediately, and if he finds the child not under the care of a competent physician he must take charge of the case himself, or see that it is attended to properly until cured.

DR. YOUNG—Some two years ago I got a complete copy of Dr. Howe's paper and recognized its importance. I had a bill drafted and introduced into the Legislature of my State, but the bill failed to pass, I suppose partly because of my negligence. I have the bill and will try and have it passed at the next session of the Legislature.

DR. RANDALL—Last winter I had the misfortune to have under my charge a case of ophthalmia neonatorum which had been treated with the utmost care from its start. The child was treated at birth by the general practitioner, with antiseptic cleansing of the eyes. I was called in after the first week. While I did all in my power to save the child's eyes, treating them myself day and night with all the skill that within me lay, I lost both of them. The case was one in which I could see nothing that was left undone; and still the result was loss of vision in both eyes. Fortunately the parties were my friends. There are doctors having such cases who will probably not meet with the kindly judgment that was accorded me in this matter; and they might not be able to stand under the blow of condemnation that may fall upon them. For the protection of ourselves and others we should be very careful in declaring too strongly that blindness can always be prevented in these cases.

DR. WÜRDEMANN—Such legislation carried through the Legislatures of all the States would be very valuable to the cause of suffering humanity. We have nothing like it in our State. For years, the reputable members of the profession have been endeavoring to get a mild medical bill passed by our Legislature but without avail. Perhaps a law for the prevention of ophthalmia neonatorum, like that proposed by Dr. Howe might be taken through. We will try it at any rate within a short period. Dr. Randall's question, "Is blindness from ophthalmia neonatorum always preventable?" occurred to me during the reading of the paper. Some cases are undoubtedly infected before birth, and even in the membranes, as in a case lately reported by Nieden. It has been my fortune to see within a short period three cases of the disease that probably happened before birth as on delivery of the head the lids were agglutinated and when opened there was purulent discharge. All three cases were attended by physicians, two of whom are noted for their antiseptic midwifery, and every proper means was used, but they all went to the bad. In the city of Milwaukee there are more midwives than physicians, and in consequence we see considerable of infantile ophthalmia. Albeit we must be careful just how strong we make our statements about the prevention and cure of the disease, as many eyes become blind under the best of treatment, and where such is the case the physician will be all the more blamed.

DR. TAYLOR—I still think that the majority of these cases can be cured as well as prevented. The greatest thing is not in giving directions as to what should be done, but in seeing that those directions are carefully and faithfully carried out. The physician can prescribe what he knows and he ought to be successful in every case where it is taken in time. I believe that nearly every case of ophthalmia neonatorum can be cured or prevented.

IS CONSUMPTION HEREDITARY?—A FAMILY HISTORY.

BY E. C. ATKINS, M.D.

COLORADO SPRINGS, COL.

That "Americans dig their graves with their teeth," is a saying fraught with more truth than elegance. That it is done unwittingly, more often than not, and that the best and most careful attention, coupled with the lack of proper information, frequently leads to the same undesirable end, will be seen by the following brief history:

A well and healthy father, and a mother wiry and strong. The former died of yellow fever at 42, and the latter of gall stone at 60. Both were country bred as were all their ancestors and all their children A perfectly clean family history for generations back. No consumption in any of them. There were nine children. Of these, the second, fourth and seventh died as infants, of cholera infantum. The first died at 19 of consumption, the fifth is the present writer, who has the disease, held in abeyance, however, by climate and careful diet. The sixth, still living, has had the disease for eight years, but is practically restored by the same means, and the ninth died of pulmonary hemorrhage at 9 months, during the illness of No. 1. The first, third and ninth all died within seven months of each other, and, after the death of this group, a complete change of residence occurred, and a period of fifteen years elapsed before No. 6 was taken with consumption, at the age of about 25, and five years later the writer developed the disease.

Now, why this condition of things? Why so many cases of consumption in a family with no previous history of it? Did they inherit it? *Can* a man inherit a thing that his parents did not have? Or was it infection? and if so why did not all have it at the time? They were all miserable and anemic and would have fallen an easy prey to the germ. So why this lapse of fifteen and twenty years before the last two developed the disease? With these last two was it inheritance or infection? Both were married, had good homes and healthy children. They lived miles apart and seldom saw each other. They could not have taken it from the same source.

It was a noticeable fact that the children of this family were none of them as strong or well developed as their parents, and were much more nervous. Why was this, and did it bear any causative relation to the development of the disease? I think it did, and will explain why.

The parents of this family were good, old-fashioned country people, well educated in the "three R's," but not at all posted on diet and the nutritive value of food. Food was food to them, no matter what kind it was. One was as good as another. Please to note that three out of nine of these children died of cholera infantum, showing, in all probability, that there was an erroneous method of feeding adopted very early in life. Such things were not understood then as they are now, and the relation of feeding to cholera infantum was not as well recognized. These three babes, coming of healthy stock, and being born as healthy as other children, and dying of cholera infantum, point out the fact that there was something radically wrong in the feeding of this family from infancy up, and that the same erroneous ideas prevailed all through their childhood will be seen by the following:

During the years of childhood and youth, from 10 to 20 years old, strong coffee was given them, ad libitum, and with the kindest intention they were encouraged to take freely of it with the idea that it fortified the system for the labors of the day. Their breakfast frequently consisted of strong coffee and rolls or cookies. Griddle cakes, pies and puddings formed a goodly part of their food, and candy was an unrestricted article of diet. Not that there was no other food, but they ate what they wanted and their appetites led them to this mode of feeding. It was the natural result of the course of feeding adopted in infancy. An abnormal appetite for the

carbo-hydrates being engendered in the earliest infancy by highly sweetened foods, and in later years by cakes and an excess of other starches, they did not care for meats, but craved and lived upon the non-nitrogenous foods, and taking this, together with the powerful effect of the coffee on the nervous systems of young and growing children, what wonder that they did not attain unto the stature of their fathers, who went to sea and lived on meat and fish. What wonder that they grew up to be neurotic and anemic. What better conditions for favoring lung diseases could be wished for?

The poor physical condition of the children attracted the attention of the devoted mother, and a physician, hoary with years and wisdom(?) was called in to suggest some way out of the dilemma, and what did he suggest? *Cod liver oil*, forsooth. More non-nitrogenous food. More heat, more combustion and no water in the boiler. If he had only looked sharply into their mode of living and said: "*More meat* for those starving children," how different would have been the subsequent history. The habits of non-nitrogenous feeding acquired in infancy followed them through childhood, and the two surviving ones into manhood. All unconsciously they were pursued by the same relentless enemy that had wiped out the rest of the family, and in the course of time it did its work upon them also. Every member of that family succumbed to erroneous feeding except the one that died of heart disease.

Now, did they inherit it? No. For it was not there to be inherited. Was it inoculation? Perhaps so, partly, but I doubt it. If you will pardon a vulgarism, they all fed out of the same trough and it was the trough that was inherited, not the disease. Consumption can be propagated by improper feeding with almost as much certainty as by inoculation with the tubercle bacillus, but it takes longer. I fully believe that the enormous death rate from this disease in this country is largely, if not chiefly, due to our mode of feeding. Why do the operatives in the New England mills and shops, who are born of healthy emigrant stock, die of this disease in such numbers? Is it not because they are poorly fed? Because, pushed by poverty, they live so largely on cheap carbo-hydrate foods and little meat? Look into the history of a given number of cases of consumption and you will find that 99 out of every 100 have been large consumers of bread and other starchy foods and poor eaters of meat. It only needs time to accomplish the end on such food.

Nature intended man to eat a large proportion of meat food with a proper addition of other foods, as will be seen from the teeth, twenty of which are of the cutting and tearing kind like those of the carnivora, and the stomach, which is a lean meat digesting organ. These ample provisions for digestion of nitrogenous foods would not have been made if man had been designed to subsist upon the cereal grains and other starches. But civilization has so changed all this that an excess of non-nitrogenous foods is the rule and consumption the result. Look at the American Indian. In his native state he was a meat eating animal, living from necessity on the products of his bow and gun, and consumption was a rare, if not unknown disease. Now he is "civilized." He is fed by the Government, according to civilized methods, with a large percentage of non-nitrogenous foods, and consumption is the scourge of the race, and is sweeping the red man off the face of the earth. Did the change of food have nothing to do with it? Why are the English people so robust and ruddy? Why is consumption less prevalent there in their foggy island than here? It is well known that they are large eaters of beef. Has this fact nothing to do with it? While there are some things to be said on the other side, I believe that the above suggestions point to a great truth as well as a fatal error in the diet of Americans, which is fast becoming worse and worse. Just in proportion as the food of the coming generation becomes more complicated and more delicate, just in proportion as the starches, etc., supersede the meats, just in such proportion will the ravages of consumption continue, and the disease run rampant among us.

BOOK NOTICES.

Transactions of the Medical Society of the State of Washington.

This modest pamphlet of 153 pages, records the proceedings of the Fourth Annual Meeting, which was held at Tacoma. The papers read at the meeting are interesting, and in general highly creditable to the authors.

Transactions Medical Association of Georgia. Forty-fourth Annual Session.

This handsome volume, containing 426 pages, is well printed and ably edited by the Secretary, Dr. D.H. Howell. The papers are excellent, with the exception of one on sterility in the male, which Dr. Thomas in the *Southern Medical Record* for October, asserts is largely plagiarized from Gross and Ultzman. The author, it may be said, had at least the good taste to select standard authorities from whom to borrow. It was probably altogether in the interest of the Society that he did so, instead of depending upon himself.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland.

This is a pamphlet of 124 pages, containing the minutes of the Ninety-Fourth Annual Meeting, the President's address, memorial notices of deceased members, and other interesting matter. The papers read at the meeting were not printed this year owing to various causes. The address of the President, Prof. Wm. H. Welch, on "Acute Lobar Pneumonia," what would have been expected from that distinguished gentleman, a finished article on the subject. He is of opinion that the *micrococcus lanceolatus*, is the specific cause of pneumonia.

Duane's Students' Dictionary of Medicine. The Students' Dictionary of Medicine and the Allied Sciences. Comprising the Pronunciation, Derivation and Full Explanation of Medical Terms, together with much collateral descriptive matter, numerous tables, etc. By ALEXANDER DUANE, M.D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Reviser of Medical Terms for Webster's International Dictionary. In one square octavo volume of 658 pages. Cloth, $4.25; half leather, $4.50; full sheep, $5.00. Philadelphia: Lea Brothers & Co. 1893.

Dr. Duane's already great experience as a lexicographer would lead us to expect an excellent work, and in general we are not disappointed, but we must confess our regret that he has chosen to adopt the English pronunciation for Latin words. He thus differs from Dunglison and Foster, and if followed, will lead to still greater confusion than now exists. He, however, makes an exc ption in words ending in *itis*, in which he allows the Continental vowel sounds. It is singularly unfortunate that in this day, when every effort is being made to unify scientific terminology, that all can

not agree. It is simply impossible to force the English vowel sounds on the remainder of the world, and there is no reason why Americans should adhere to a pronunciation only used by a single nation. Dr. Duane has carried this Anglomania to an extreme, for instance: the pronunciation, "ka-thet-ur-ism," is so far away from the ordinary usage, as to be almost unrecognizable. The same remark applies to gelatinize, which the author advises us to pronounce "jee-lat-i-nis." He tells us to pronounce capsule "kaps-yule," and so would any one born within the sound of Bow Bells. Caproyl must be pronounced "ka-proh-il."

It is a great pity that an excellent dictionary should be used to cockneyize the already bad pronunciation in use in this country.

The dictionary excels in definitions of chemic terms, but will always be a bad book for students, until its vicious system of pronunciation shall be corrected. A student who follows this pronunciation will find his medical language unintelligible when he visits the Continent.

The Throat and Nose and Their Diseases; With 120 Illustrations in Color, and 35 Engravings. Designed and executed by the Author, LENNOX BROWNE, F.R.C.S.E. Fourth Edition. Pages, 734. Philadelphia: Lea Brothers & Co. 1893.

Mr. Browne is one of the eminent laryngologists of the world, and, as the value of a treatise on this subject depends largely on the conclusions reached by individual work, we can commend this as furnishing results of a large and extended experience, enriched by details of cases that have come under his own observation. The present edition contains much that is new, especially in that part devoted to diseases of the nose. The colored illustrations grouped together in the back of the volume were made by the author and are admirable in drawing and coloring. Many of the drawings in the body of the book, however, have been very poorly reproduced in the wood cuts.

In treatment of diseases we find much to commend and some things to criticise. Among others, the author's use of menthol. In the present, as in former editions, he advises menthol in a solution, for the nose, of 10 to 20 per cent. Few patients can tolerate such a strength, and complaints have been made by a number of patients of the severity of the treatment by menthol spray, which they received while abroad. We have found from a number of years' experience, that as good results are obtained by the use of a solution containing from 1 to 10 grains to the ounce without the suffering attendant on the stronger applications. Mr. Browne has become a convert to the more extended use of chromic acid in turbinated hypertrophies, and gives explicit directions as to his method of applying it. In the hands of an expert we do not doubt that it is often efficacious, but in the hands of the average practitioner we can not but believe, with many of the best authorities in this country, that it is an unsatisfactory agent not easily controlled, causes more pain, and is not nearly so efficacious as the galvano-cautery. Anesthesia is mentioned as being accomplished by placing a cotton wool pledget soaked in cocain 15 per cent in the naris, a method that we believe in the majority of cases would cause the absorption of more cocain than necessary, and would leave some parts untouched by the solution, and not anesthetized. We find that the author reasserts his belief in the non-identity of laryngo-tracheal membranous croup and diphtheria, the former of which he regards as non-specific, sporadic, non-inoculable, non-infectious, causing death by an exudate which mechanically obstructs the larynx and trachea, and attacks children only. These views of the non-identity of the two diseases are at variance with those of many authors, and we are apt to continue to be in doubt in the presence of cases of membranous croup after reading his views carefully, and to treat the cases as diphtheritic; a condition of affairs from which we hope some day to be rescued by results of the study of the bacteriology of this disease, which has been truly called "the scourge of childhood, the dread of parents and the reproach of medical art."

On the whole, the general practitioner and specialist will find a book fully abreast of the times, with very much to praise and little to criticise, and one which covers the subject completely.

Text-book of Otology for Physicians and Students. By DR. L. JACOBSON, Privatdocent, etc., Berlin, with 318 Illustrations on 20 plates. Pp. 450. Leipzig: Georg Thieme, 1893. (German Edition.)

A result of the extraordinary and healthful activity in the field of otology is the appearance of several treatises within the last few years. The text-book of Dr. Jacobson is largely based on his experience of sixteen years as Assistant in the Otological Clinic of the Berlin University. Familiarity with this book will certainly direct the attention of fellow practitioners to the opportunities at the Berlin clinic.

The book is intended mainly for the general practitioner who wishes to secure a more thorough knowledge of aural diseases than our colleges can give. Stress is, therefore, laid upon a clear and succinct description of the various diseases in all their aspects. The interdependence of general and aural diseases, and especially the danger to life from the latter, are well and often emphasized. The treatment is fully set forth in all cases. The judicious tenor which characterizes the language of the treatise invites the confidence of the reader. Meddlesomeness is deprecated. Cases of severe injury, for instance, or even death, resulting from the bungling use of forceps when the operator was not accustomed to the use of reflected light in guiding his hand are recorded in every country. Asepticism is urged even in small operations. The Eustachian catheter is being displaced by Politzer's and other methods of inflating the middle ear, which do not require special skill. This naturally leads to the abuse of that potent remedial agency, air, which can do such harm when unnecessarily employed. It is stated how catherization aids auscultation of the middle ear, how it is more advantageous in unilateral disease, etc. The importance of early treatment in those cases of dry catarrh of the middle ear, which later on prove so annoying, is impressed on the family physician, who is generally first consulted.

The illustrations are of great number and variety, and although not beyond reproach artistically, they will prove quite acceptable. The normal anatomic relations of the auditory organ, instruments for daily use and the greater operations, appliances for the improvement of hearing, pathologic changes of the drum head, malformations of the outer ear, etc., are shown in plates at the end of the book.

Dr. Jacobson's skepticism in regard to the reliability of the generally accepted tests for hearing will not be shared by all his readers, but his able arguments are well worthy of consideration. Lucae's pressure probe has often proved efficacious in non-suppurative catarrh and when the drum head is perforated. This useful instrument has not gained the popularity it deserves. Any measure promising relief in that prevalent and intractable disease which embitters the existence of so many of our patients—sclerosis—should be hailed with delight, and be given a fair trial before uncertain operations are advised. The major operations are accurately described with due reference to the latest publications. The operation of Stacke, as modified in the Berlin clinic for several years by Dr. Jansen, is clearly described. The short chapter on topical diagnosis of cerebral diseases, and projection of the cortical centers and gyri on the surface of the skull, is indicative of the tendency of modern otology.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, NOVEMBER 25, 1893.

NATIONAL COMMISSION ON THE OPIUM TRAFFIC.

When any abuse or apparent wrong excites widespread inquiry, the English Government has always shown great readiness to investigate it through a Parliamentary committee. From this has come some of the best studies on various social and sanitary topics ever made. The temperance question, and asylums for inebriates, insane and others of the dependent classes have been the subject of exhaustive investigation and the reports in the Blue Books are libraries of facts of great value. In striking contrast to this is the opposition of our Congress for many years, to the persistent efforts for a governmental commission to inquire into the alcoholic traffic of this country. The English Government during the past ten years have had three Parliamentary Commissions who have, after months and years of investigations, issued large reports of testimony, on various phases of alcohol and its use and abuses.

A few months ago the House of Lords appointed another commission on the opium question. It is well known that a large part of all the opium used in the world comes from India. That Government has protected and encouraged this traffic, and even engaged in war in its defense with China, who tried to stop the trade which they claimed produced so much demoralization of the people. This opium trade has been pressed with great vigor by the Government of India and its traders everywhere. As a result, an anti-opium society has been in existence in London and India, who have opposed the extension of the traffic, especially to semi-civilized countries, and who have urged that restrictions in both its growth and use should be applied. They demand that it should be treated as a medicine and poison and should be regulated, and not put on the market free and even urged as a luxury and food. It is to investigate these disputed facts that a Commission has been appointed. The facts to be determined were 1, whether the growth of the poppy and manufacture and sale of opium in British India should be prohibited except for medicinal purposes, and whether such prohibition could be extended to the native States; 2, to note the existing arrangements with the native States in respect to the transit of opium through British territory, and on what terms the arrangement could be with justice terminated; 3, the effect on the finances of India of the prohibition of the sale and export of opium, taking into consideration, *a*, the amount of compensation payable; *b*, the cost of the necessary prohibitive measures; *c*, the loss to the revenue. 4, whether any change short of prohibition should be made in the system at present followed for regulating and restricting the opium traffic and so raising a revenue therefrom; 5, the consumption of opium by the different races and in the different districts of India, and the effect of such consumption on the moral and physical condition of the people; 6, the disposition of the people of India in regard to the use of opium for known medicinal purposes, their willingness to bear in whole or in part the cost of prohibitive measures."

This Commission is composed of several eminent physicians and government officers and have had six sessions in London, and then adjourned to India to take testimony on the ground, of persons who would necessarily be more familiar with the facts than others. The testimony of witnesses during these six sessions at London was singularly frank and outspoken. Medical and other missionaries were emphatic on the evils of indiscriminate use of opium. DR. GOULD said that one drug firm imported 50,000 ounces of morphia to China last year. The large quantities of opium consumed in Burma, China, Formosa, Siam, Japan and adjacent countries, and the degenerations which have followed, were described in some detail. Curious statistical facts were related of the extent and secrecy of the use of opium, and various devices to procure it, and the profound mental and physical degeneration which followed. Unlike spirits or other drug takers the opium user rarely came under legal or public notice; he became more secluded and retired from public observation as his addiction increased. Opium was a favorite means of suicide, and a large per cent. of these cases died by this means.

While the evils and horrors of opium addiction were urged in the strongest way and sustained by facts and statistics, the opposite side made a very startling presentation of contrary facts and statements. One man of large experience had never known a death from the use of opium, and believed its use as harmless as that of smoking hay or straw. An-

other witness was sure that opium in any form was beneficial to the native races, and only of damage to the Europeans when used in excess. Other witnesses were equally clear that no harm could follow the use of opium in moderation by any peoples.

The Commission showed great firmness in calling all persons who might possibly, from experience and observation, be acquainted with the subject. If his testimony seemed extreme he was permitted to explain, and was questioned as to the facts and basis for his statements. His capacity as a good observer was questioned frankly by the members of the Commission, and he was given ample opportunity to make all his views clear. The next meeting of the Commission will be at Calcutta in November, and be continued in different cities. It is evident that the testimony which will be given before this Commission will comprise a new chapter on opium and its effects on the race, and the Blue Book in which the testimony will appear will be of unusual interest. It is a source of regret that we can not have a similar commission, made up of experienced men, above political levels, to take testimony and report on the many great scientific and sanitary problems which concern the entire country. Such commissions could gather facts that would be authoritative in the study of many problems now practically buried in absurd theories and dogmas.

TYPHOID FEVER AND WATER SUPPLIES.

There are fashions in medicine as in everything else, and among the sanitarians and public health men as among the clinicians. When some years since the connection between typhoid fever and sewer air was suggested by the evidence of accumulated observation, every outbreak of that disease in which the mode of propagation was not patent was ascribed to defects in the sewerage system or in the house plumbing. More recently, when the water propagation of the disease was demonstrated in some instances that are now classical, as the Lausanne epidemic in Switzerland and the Plymouth outbreak in this country, it became customary to ascribe to an infected water supply all cases of uncertain origin. Conservative medical men who accept new views slowly have often been dissatisfied with the grounds on which water supplies have been condemned in special outbreaks. There has, however, now been made public in a Supplement to the Report of the Medical Officer of the Local Government Board of England, an instance in which, in the words of the Medical Officer: "Seldom, if ever, has the proof of the relation of the use of grossly befouled water to the wholesale occurrence of enteric fever been more obvious and patent."

Over an area of 1,100 square miles in England, comprising 32 sanitary districts and containing half a million of inhabitants, enteric fever has for years past been unduly prevalent. Within this area where the infective material was ready to hand there were 10 sanitary districts containing 200,000 of the aforesaid inhabitants, in which occurred two marked and sudden outbursts of enteric fever, one Sept. 7—Oct. 18, 1890, and the other Dec. 28, 1890—Feb. 7, 1891. The remaining portion of the area mentioned had meanwhile insignificant fever rates. Moreover, certain of the affected districts suffered more than others, having rates of 29 and 24 per 10,000 of the population, as compared with 3.5 and 1.5. A careful inquiry was made into the general sanitary circumstances of the affected districts, dealing especially with questions of house accommodation, disposal of excreta and refuse, sewerage, drainage and milk supply. As regards the last, there was of course little likelihood of its being concerned on account of the wide extent of the involved area. Many sanitary faults were discovered, but no community of any such, in sanitary factors could be found to affect the several areas invaded by the fever. And not only so, but amongst localities where precisely similar faults obtained, some places suffered severely whilst others enjoyed almost complete immunity. One fact, however, was found to be common to the affected places, and that was the use of water pumped from the river Tees. This river is grossly fouled with sewage, and opportunities for the access of the specific material of enteric fever to its waters had been constantly recurring. Immediately antecedent to the epidemic outbursts, sudden floods had washed vast masses of filth which had been accumulating on its banks, into the river and along its current to the points of intake, from which the water was pumped for delivery to certain populations; and it was these populations who suffered so severely from the exceptional prevalence of enteric fever.

DR. FRED W. BARRY, Inspector for the Board, deserves high credit for a report, which will tend greatly to the suppression of typhoid fever by bringing forward so prominently its connection with the presence of sewage in water.

HAVE AGENTS AUTHORITY TO EMPLOY PHYSICIANS?

The question as to an ordinary agent's, or general manager's authority to employ a physician to attend an injured employe seems to be one not yet settled by the courts. There are several branches of the subject, one pertaining to railroads, another to factories and manufacturing establishments. The first is differentiated from the second and other important divisions by the fact that railroad companies occupy a peculiar position with reference to such matters; exercising quasi-public functions, being clothed with extraordinary privileges, carrying their employes to

places remote from their homes, subjecting them to unusual hazards and dangers. Here a number of decisions will be found; and the law has, by reason of the dictates of humanity, and the necessities of the occasion, imposed upon such companies the duty of providing for the immediate and absolutely essential needs of injured employes when there is a pressing emergency calling for their immediate action. In such cases, even subordinate officers are sometimes, for the time being, clothed with the powers of the corporation itself for the purposes of the immediate emergency, and no longer. But to inquire further into this, is not our purpose at this time. It is to call attention to the decision of the Appellate Court of Indiana in the case of Chaplin V. Freeland, rendered Oct. 13, 1893, which was an action brought by John T. Freeland to recover from William Chaplin, a resident of Canada, doing business at Hiltonville, Ind., for services rendered at the request of his superintendent and general manager to a servant of his who was injured while in his employ. This seems to be a pioneer on the general subject, or at least on the power of an agent or general manager of an ordinary manufacturing establishment to employ a physician or surgeon for injured employes. The court says that it has been referred to no case holding it to be within the scope of the duties of a manager of a factory, for either an individual or a corporation to employ physicians or surgeons for employes. Neither has it, it says, been able to find any such case. The case of Swazey v. Manufacturing Co., 42 Connecticut, 556, is cited as authority for the proposition in I American and English Encyclopedia of Law, 365, as applied to corporation, but the court says that the learned editors have misconceived the holding of the case, which is directly to the contrary, deciding that it must be left to the jury, as a question of fact, whether or not he had such power. The court says that it is, therefore, not prepared to hold, as a matter of law, that the employment of a physician or surgeon for injured employes comes ordinarily within the scope of the duties of a general manager of an ordinary manufacturing business. Usually, an injured employe procures and pays for his own attendance, and then, if his employer be in the wrong, recovers this sum from his employer, with his other damages. But it is to be noted that there were no facts brought out on the trial showing any emergency save a necessity for the immediate services of a surgeon. No necessity for action by the employer was shown. Neither did it appear but that the injured man was possessed of abundant means to provide for himself, nor that he lacked friends and relatives able and willing to provide for him. Whether or not such an extreme case might arise as would justify or require the court to impose on individual employers a duty analogous to that imposed on railroad companies, it is said it was unnecessary for it in the present case to determine.

The moral of which is, that if you wish to be "cock sure" of your fee, you must have somebody positively assume the liability when you take the case.

THE PASSING OF THE CORONER.

The New York Academy of Medicine is virtually a unit in seeking the demolition of the antiquated coronorial system. The Medico-Legal Society has also taken action in the same direction. New laws will without doubt be enacted at the next session of the Legislature of the State of New York, abolishing the old methods and introducing measures planned after the Examiner system of Massachusetts. The many abuses of the old system—the growth of generations and unstinted authority, especially in our badly or crudely governed cities—have at last made themselves so obnoxious that even the conservative Academy has been impelled to action. The following paragraphs are a part of the voluminous series of resolutions adopted at the last meeting of the Academy:

"*Resolved*, That a medical man of mature years, established character, broad mind and sound and extensive information in anatomy, pathology, toxicology and all the other branches of forensic medicine must be the responsible occupant of an office in whose keeping are the most sacred interests of the individual and of the community, and to him should be delegated the initiative and power to elaborate the investigations of an actual or alleged criminal act, his conclusions being reported to the office of the District Attorney; and be it

"*Resolved*, That the New York Academy of Medicine earnestly calls the attention of the approaching Constitutional Convention to the admirable system of medical examiners which the State of Massachusetts has substituted for the coroners' system, and the Academy urges the enactment of similar laws in this State."

EXPERTS MAY TESTIFY AS TO NECESSITY FOR THE REMOVAL OF AN EYE.

An expert in the treatment of diseases of the eye may testify in an action brought by a patient to recover damages from a third party for negligence resulting in an injury to her eye, that he removed the injured eye, which was totally sightless, to save the sight of her other eye, which was being impaired, and that he had her under his charge for several weeks, and had a distinct recollection of her case. And so may another expert testify in such case; the Supreme Court of Wisconsin holds, in Reed v. City of Madison, decided Sept. 26, 1893, that in his opinion, it was necessary to remove the injured eye to save the sight of the other eye, which was endangered by sympathetic inflammation.

Blank Applications for membership in the ASSOCIATION, at the JOURNAL office.

SELECTIONS.

The Treatment of Articular Rheumatism.—Dr. Edwin Lang regards salophen as the most suitable and effective anti-rheumatic at the present time. Even in doses of 1.5 grams four or five times daily it exerts a favorable influence upon the fever, not producing a rapid remission, but a gradual reduction accompanied with a relief of the pains and improvement of the general condition. As an anti-rheumatic, salophen has a specific effect upon the symptoms of acute articular rheumatism. In very recent cases the pains in the joints diminish on the following day, subsiding gradually during the use of the remedy, and the swelling of the joints decreases with equal rapidity, so that mobility is soon restored. Although light cases are for the most part cured completely and permanently in the course of three or four days, this favorable and rapid result can not, of course, be expected in all cases. Many cases of acute articular rheumatism are frequently so obstinate that salophen must be administered for a long time, often for weeks, before the symptoms have completely vanished, but it is in this particular class of cases that salophen often proves invaluable. For while other anti-rheumatics after continued use always produce disturbance of the digestive organs and of the general health, in consequence of which they have to be given up, the anti-rheumatic and anti-febrile effects of salophen may be utilized uninterruptedly, since it does not give rise to gastric disorder nor affections of the ear, and does not impair the appetite and digestion even when administered for weeks. This property of salophen which is of extreme value in the cure of these obstinate cases depends upon the fact that it passes the stomach unchanged, being decomposed in the intestine and that a large portion of the drug is excreted through the skin with the resulting profuse perspiration. It may further be mentioned that by reason of remarkable curative properties salophen has been employed for the treatment of many nervous affections and has proved a valuable remedy for relieving pains, especially in the various forms of nervous headache. In cases of unilateral headache a single dose of 1.5 grams is often sufficient to at once arrest the attack.

Salophen must be regarded therefore as superior to all other similar remedies, both as regards its anti-rheumatic and anti-febrile and its marked anti-neuralgic effects, but its chief point of superiority is that it may be used without danger by the laity, inasmuch as symptoms of poisoning, such as have been frequently observed after the incautious use of antipyrin and antifebrin, never occur. We are, therefore, warranted in regarding salophen as one of the new remedies which by reason of its freedom from danger and its prompt pain-subduing effects, will prove extremely serviceable as a household remedy in recent cases of articular rheumatism, since it never can be predicted with certainty whether the disease, even if of mild character, will be attended with injurious consequences.—*Hamburgische Hausfrauen Zeitung*, No. 166, 1893.

Extremes in the Death Rate of Typhoid.—"Dr. Benjamin also remarked that the treatment of typhoid fever had improved or the character of the disease had become milder. His attention had been arrested by the report from the Cooper Hospital of Camden, where during the past two years the mortality from typhoid fever had been reduced to 2 per cent. One of the fatal cases was a man who undoubtedly would have gotten well had he not disobeyed orders and got out of bed when known to have a weak heart. He died suddenly of heart failure. When looking up the death rate from typhoid he found that in one hospital in Philadelphia it was 6 per cent., and the treatment employed, said to be the best, was by the cold pack. In the Cooper Hospital they had not used the cold pack, but had employed the antiseptic treatment of disinfecting the bowels. In the Pennsylvania Hospital, the death rate from typhoid was 9 per cent. last year. He found to his great astonishment that the Philadelphia Homeopathic Hospital (Hahnemann) reported a death rate from this disease of 24 per cent. the last two years, 1891 and 1892.

"The location of their Hospital was one of the best (and under the treatment of their leading Professors) and he was unable to understand why they should have a death rate 1200 per cent. higher than others, 100 per cent. higher than the most unfavorable statistics in Philadelphia under the "old school" system, yet the Homeopathics laid special claim to superiority in fevers, if in anything. The epidemic had been the same, the circumstances the same (except of course the treatment). No explanation had been offered, notwithstanding the daily press had mentioned the subject."—From the Transactions of the Medical Society of New Jersey, 1893. Pages 36–37.

A Contribution to the Study of Club-Hand.—BY REGINALD H. SAYRE, M.D., Orthopedic Surgeon to Bellevue Hospital Outdoor Department.[1]—Congenital club-hand is a rare deformity. Club-hand resulting from an injury to the central nervous system, or to an unsuspected fracture of the bones at the time of birth, is not strictly speaking a congenital affection. In congenital cases there are three varieties: 1, the skeleton is complete and well-formed; 2, the skeleton is complete, but ill-formed; 3, the skeleton is incomplete and distorted.

The general belief is that most of the cases belong to the third variety. The writer has seen in all five cases, only two of which belonged to this division. In four of the five cases club-foot in one form or another was also present.

In milder cases, manipulation and retention in the improved position with plaster-of-paris is of great benefit. In severer cases, section of tendons, ligaments and fascia may be necessary. Open section is often preferable, and when the flexors are involved it is better to operate in the arm, cutting the tendons diagonally, slipping the ends by each other until the required length is gained and then suturing. Two of the author's cases were due to great contraction of the flexors of the fingers, but neither of them came to operation. In a double case, which is still under treatment, manipulation and plaster-of-paris is doing good work. In another case, also under treatment, the child has right club-hand, right club-foot and left lateral curvature. The whole right side of the body is less developed than the left, possibly due to disuse, the right hand and foot being so deformed as to prevent even moderate use. The club-foot was recently cured by an operation. In the club-hand, the radius and thumb are absent, together with the first metacarpal bone and several of the carpal bones, exactly which ones it is difficult to make out. The hand was perpendicular to the arm on the radial and flexor side, the ulna being curved 30 degrees to the radial side. The carpus did not articulate with the ulna, but was drawn up above its distal end, and was attached to it by means of firm ligamentous bands.

The writer first performed an osteotomy of the ulna and corrected the curve. After an ineffectual attempt, by several weeks of traction, to lengthen out the ligaments so that the carpus could be brought down to the end of the ulna, he cut down upon the ulna and separated all the ligamentous attachments from it, but even then could not draw down the carpus sufficiently, and he therefore removed two carpal bones which he thought were the os magnum and the uniform. The tip of the styloid process was then cut off, and the end of the ulna was inserted into the gap left by the removal of the carpal bones. The hand was dressed in the straight position, and after three weeks, passive movements of the wrist were begun with the object of creating a serviceable joint if possible. The operation benefited both the position and the usefulness of the hand, although an apparatus is still worn to give strength to the wrist and to preserve a better position of the ulna, which tends to slip a little from its position unless thus supported.

The treatment of club-hand must depend upon the conditions existing in each individual case. The writer's operation is the first one of the sort reported, so far as he is able to learn.

[1] Abstract of paper read at the Pan-American Medical Congress. Published in the JOURNAL last week, but contained so many typographical errors that it was necessary to reproduce it.

ASSOCIATION NEWS.

Change of Date of Meeting—Official Notice.—In order to enable the State Medical Societies to send instructions as to their action in the matter referred to them by the AMERICAN MEDICAL ASSOCIATION at its recent meeting at Milwaukee, and for other reasons, the time of meeting of the ASSOCIATION at San Francisco has been changed from the first Tuesday in May to the first Tuesday in June, 1894.

WILLIAM B. ATKINSON, Permanent Secretary. JAMES F. HIBBERD, President-Elect.

SOCIETY NEWS.

Orleans Parish Medical Society, Sept. 9, 1893.

Meeting was called to order by VICE PRESIDENT M. M. LOWE. Sixteen members were present.

DR. E. D. FENNER read the following paper on

EXTERNAL URETHROTOMY FOLLOWED BY SEPTIC ARTHRITIS.

The case which I propose to present to you is in truth one upon which an external urethrotomy has been performed, but the operation itself has been completely overshadowed by the complications that ensued. I lay it before you, not to serve as a text for any discussion of septic arthritis, but simply as an example of the severe and unexpected results that sometimes follow an apparently simple and favorable operation. For many of the data I am indebted to Mr. Lovell, R. S. of the ward. John Henry, aged 21, was admitted to No. 2 on June 25, 1893, suffering from urethral stricture. He passed his urine with straining and in a very small stream. This he had noticed three months before, but it had grown progressively worse. As is frequently the case with negro subjects, he denied any previous venereal trouble. On June 27 a filiform was inserted with the intention of passing a Goulé sound. The whalebone was old and defective, and, slipping from the grasp of the assistant who held it was doubled upon itself by the sound and broke off in the urethra.

External urethrotomy was now done, the whalebone extracted (a portion of it was fortunately still in the urethra) and the whole canal was dilated with steel sounds. Considerable traumatism was inflicted upon the penile portion in this operation.

The patient was put to bed and in the evening his temperature was 101 degrees. From that time till July 5 the temperature ranged between 99 and 100 degrees, when on the morning of the 5th it rose to 103 degrees. From that time till the 16th it remained very high but irregular, owing to the use of antipyretics. On the 8th the thermometer registered 105½ degrees; on the 11th it was again above 105 degrees. These were the highest records. On July the 16th he was transferred to a medical ward, on the suspicion of typhoid fever.

From the day after the operation he complained of pain in the urethra and perineum, but no signs of a phlegmon could be discovered and the urine was only slightly tinged with mucus. With the advent of the high fever came intense lumbar pain, with some tympanites and tenderness over abdomen.

He remained in the medical ward for thirteen days, during which there developed an arthritis of the left wrist, and of the right knee and elbow. His temperature now ranged between 99 and 102 degrees, generally being about 100 degrees. His condition was one of general sepsis. Abscesses formed and were opened on the shin below the inflamed knee, and in the axillæ. From the right elbow and knee, fluid was removed with the aspirator, in which was found a considerable amount of pus. The joints were immobilized with plaster casts, and in the case of the knee an ice bag was kept on for three days, before the plaster was applied.

In addition to these serious joint troubles, on August 10 a profuse watery diarrhea commenced and continued till the 23d, when it was finally checked by the lead and opium pill, having been uninfluenced by mixtures of bismuth, salol and chalk. From August 23 the man began steadily to improve. The swollen joints subsided, temperature seldom rose above 99 degrees, appetite returned, and on September 1 he got up and has since been able to sit up during the day.

Of course, during this time the urethra has been left to itself; at no time has the man been in a condition to stand the passage of a sound, but some urine passed by the meatus, and before long I hope to be able to pass an instrument and restore the canal. Throughout the case the treatment has been symptomatic. Fever was combated with quinin and phenacetin, and with sponging.

The joints were put at complete rest by means of immovable splints. In the case of the knee a considerable amount of fluid was withdrawn by the aspirator and the ice bag applied for several days.

While still weak and not entirely over the arthritis, the patient is rapidly improving, and we hope will yet recover entirely.

DR. CHASSAIGNAC said that the case was more interesting as a case of septicemia than of urethrotomy. It must be gratifying to those in charge of the case to know that there is a fair prospect of the patient's recovery, which is a rather unusual termination in cases of general septicemia. It would be interesting to trace the course of the infection; if this could be done we would know how these complications arise and take measures to prevent them.

DR. BLOCH said that the feature that interested him was the persistence of the sepsis after free drainage had been afforded by the operation. There must have been a focus of infection in the shape of a deposit of pus somewhere. He spoke of a case that Dr. Michinard had shown him in his clinic. The patient had pus-tubes; the knees became the seat of a septic arthritis, and the patient died, as she was too weak to be operated upon.

DR. MCSHANE recalled a case that he had seen and dressed in Dr. T. G. Richardson's service at the Charity Hospital in 1881. The patient was a negro, aged about 30 years, who had contracted gonorrhea, followed by septic arthritis of the right knee. The joint was first aspirated, then incised, and drainage tubes inserted; but necrosis set in, and the man finally died of exhaustion.

DR. FENNER, referring to Dr. Bloch's remarks, said that he did not see how, in this case, there could have been any purulent focus; there was no room for it.

DR. GABERT reported a case of abortion of three months. The patient admitted that she had had some sort of a criminal operation performed on her and had also taken some medicine to bring on abortion. She had some pretty severe hemorrhages, and she sent for him. On examining the uterus through the speculum, he found two wounds in the lips of the organ. He ordered antiseptic vaginal and intrauterine injections. He thought, from the hemorrhages, that the uterine contents had been expelled; but, on the eighth day, the ovum came out intact, sac and all. He was surprised at that, since he had at first thought that in the attempt at abortion the ovum had been broken up and mutilated. He thought that the hemorrhage must have come partly from the cavity of the body of the uterus and partly from the lacerated os.

DR. SCHEPPEGRELL reported a case which he regretted to say, was incomplete. He first saw the patient six months ago. She then had some nasal stenosis, which the doctor relieved by operating on the septum. She mentioned, at the time, that she had violent headaches, coming on at intervals of two or three weeks. The pain radiated from the center of the head to the vertex. During these headaches, her eyes and face were congested. After the headache had lasted several days, it would become less intense, and suddenly, while the patient would be stooping forward, there would be a sudden gush of clear, straw-colored inodorous liquid from the nostrils. This discharge would be followed by a complete cessation of all the symptoms.

Feeling that the liquid must come from a well-defined cavity and not from an oozing surface, Dr. Scheppegrell washed the antrum of Highmore on both sides, with negative results. He punctured the ethmoidal sinus with the same results; and passed a trocar into both sphenoidal sinuses, but no liquid was obtained. Instructed by the doctor, the patient collected some of the liquid for microscopic examination. On Monday, Sept. 4, 1893, the liquid gushed forth with its usual rapidity after several days of headache. She caught some of it in her hands and poured it into a bottle which she kept ready. This liquid was examined by Dr. McShane, who found it to contain about 5 per cent. of moist albumen. Under the microscope it showed a small number of leucocytes and a multitude of pavement epithelial cells. When the liquid was allowed to stand in a conical glass, a rather heavy sediment deposited, which consisted principally of pavement epithelium, the cells of which were arranged singly and in groups. Dr.

Scheppegrell said that he was at a loss for a diagnosis of this case, and he laid the facts before the Meeting in the hope that some one else might have had some experience that would clear up his case. All of the cavities accessory to the nasal cavity are lined in the columnar ciliated epithelium. He had not yet been able to catheterize the frontal sinus.

DR. CHASSAIGNAC suggested the possibility of hysteria, and means should be tried to ascertain same.

DR. SCHEPPEGRELL said that the character and training of the patient were such as to preclude the possibility of such deception. However, he would arrange matters so as to have the patient watched by a trained nurse, and thus settle beyond all doubt the nasal origin of the liquid.

DR. GASSAWAY said that Dr. Scheppegrell's case was unique as far as his reading goes. In regard to Dr. Fenner's case he said that he had never seen a case exactly like it at the Marine Hospital. There were records of twenty urethrotomies with one death from fatty heart and old age. Dr. Fenner's patient may have had gonorrhea. The Marine Hospital Service contains an abundance of such cases. Gonorrheal rheumatism may occur two or three months after the gonorrhea is cured. He has seen cases of gleet with stricture that developed gonorrheal rheumatism. There are different views as to what constitutes gonorrheal rheumatism. Gonorrheal cases are numerous. It often happens that a man with gleet will flush out his urethra with urine before presenting himself at the clinic, and no evidence of the disease is seen at the examination. Such cases may afterwards develop gonorrheal rheumatism. In his service it is very unusual to have a temperature of over 38 degrees C. (100 2-5 degrees F.) after operations on the urethra.

DR. CHASSAIGNAC did not think that Dr. Gassaway's suggestion of gonorrhea in Dr. Fenner's case was well founded. His observations lead him to believe that a case under constant care would not develop the joint complications.

DR. GASSAWAY did not mean to say that all cases of rheumatism developing after gonorrhea are really due to it. Dr. Gassaway also desired to call attention to the great rarity of true typhoid fever in New Orleans. In all of the places in the Mississippi Valley in which he has been stationed in the last five years, he has seen only five cases of undoubted enteric fever. In Philadelphia, about one-third of all the cases seen at the Marine Hospital were of typhoid fever.

DR. GARERT had a case of pleuro-pneumonia under treatment in the beginning of summer. The man got well, and then he had an attack of true typhoid fever. He got well again, and then his sister (aged 14) took typhoid fever. When she was convalescing her mother took the disease and died on the ninth day. In the course of four months there were three cases of typhoid fever in one family.

DR. BLOCH thought a great many cases of typhoid fever were masked by the remedies used. He had charge of four wards in the Charity Hospital, where he had a good opportunity for examining fever patients. Good notes of the cases were kept. Several patients and three autopsies were held. These patients had not had any diarrhea, and yet the intestines showed the characteristic lesions of the disease and even perforation. Death ensued from exhaustion due to the fever.

DR. PARHAM had seen a number of cases of so-called simple continued fever. Dr. Archinard had informed him that he had performed autopsies on a number of such cases while he was connected with the pathological department of the Charity Hospital. He found the typical changes in Peyer's patches in a number of such cases. There was no diarrhea, no parched tongue, no petechiæ. The subject is one of great importance to this community.

DR. CHASSAIGNAC said that if Dr. Gassaway referred to classical typhoid, he certainly had seen very little of it in New Orleans. The disease is regarded as a rarity in the wards of the Charity Hospital. All of the cases that he had seen were persons who had come from other places, where they had taken in the germs of the disease.

DR. GASSAWAY said that both of the cases he had seen here had come from St. Louis, Mo. The disease developed while the patients were on the boat.

DR. FENNER saw two cases in his ward for negro males. They died two or three days after entering the hospital; at the autopsy, the characteristic changes in Peyer's patches were seen. During his two years' service as a resident student in the Charity Hospital, he performed about sixty autopsies; and in all of those he did not see any inflamed Peyer's patches.

DR. LANDFRIED said that while he was resident student at the Touro Infirmary he saw several cases of undoubted typhoid fever, and a great number of cases of continued fever. He desired to speak on diphtheria. He performed intubation in eight cases; all of them died. His experience with intubation, even in apparently favorable cases, has been such as to make him feel that it is not a very valuable addition to our means of combating the disease. He was compelled to look for something else, and he has adopted a plan of treatment which has given very gratifying results. He uses peroxid of hydrogen in the following manner: he makes a mixture consisting of Marchand's peroxid of hydrogen 3 parts, water 1 part, and a little bicarbonate of soda (about ten grains to the ounce). He fills a laryngeal syringe with this mixture. Then he passes one index finger down to the arytenoid eminences as a guide, and slides the nozzle of the syringe, which is held in the other hand, down to the end of the fingers. He then quickly squirts the liquid into the vestibule of the larynx, and flushes the larynx and the lower part of the pharynx. This manipulation causes a brief dyspnea and great distress, but the efforts at coughing thus provoked bring up large chunks of false membrane, and the breathing at once becomes easier. From this on the patient continues to improve. The nourishment of the child is also looked after. After the larynx has been flushed out as above described the patient is able to swallow better.

DR. SCHEPPEGRELL referred to a report on diphtheria recently published in the *New Orleans Medical and Surgical Journal*, in which it was stated that biniodid of mercury used internally had given excellent results. He himself had used a solution of bichlorid sprayed into the larynx. He treated about a dozen cases in this manner and lost three.

DR. LOWE said that about three years ago he treated six cases of diphtheria in one family. Dr. H. W. Blanc, the then Chief Sanitary Inspector, saw all of the cases as they developed, and pronounced them diphtheria. Dr. Lowe used sprays of bichlorid of mercury (1-2000), lime water and peroxid of hydrogen in the different cases. They are now all living.

DR. BLOCH said he had used a spray of peroxid in one case. The child, aged 5 years, died. In another case he put lime in a basin and poured water over it and slaked it. The child's head was held over the basin to cause him to inhale the fumes. The child got well. In another case it was necessary to advise tracheotomy, but the parents would not consent. The child grew worse, and the parents permitted the operation, but it was too late, and the child died on the table.

The Meeting then adjourned.

AUGUSTUS MCSHANE, M.D., Secretary.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Concluded from page 788.*)

The characteristics and special features of construction of the various meters submitted for examination, are set forth with considerable regard to detail in the following statement:

DESCRIPTION OF MILLIAMPERE-METERS ON TEST BY THE COMMITTEE ON METERS.

Weston.—These instruments are justly considered by the electrical profession as standard. The permanent magnet is large, has soft iron pole-pieces, and the armature core is of soft iron and takes up nearly all the space between the pole-pieces, acting practically as a "keeper," maintaining the magnet strength constant. Two spiral springs, wound in opposite directions, keep the pointer normally at zero. The armature is pivoted in fine jeweled bearings. The indicating mechanism is the same in all the Weston meters, the different ranges being obtained by varying shunts. These shunts are wound *differentially* on the *magnet* (and so give no magnetizing effect) and any heat that is developed is dissipated through the mass of the iron. The scale is excellent, being the best of any submitted, and is legible at a considerable distance. It is intended that this instrument be used *flat*, so that it may be necessary to use a reflector with it under some conditions. This is also true of all but three of the meters on test. Internal resistance is very low, being but .199 ohms in the instrument reading from 0 to 300 milliampères. No special adjustment is necessary in setting up, the only care required being that the current flows through

the instrument in the right direction. External magnetic influences do not affect the instrument appreciably. It is a very convenient instrument to carry about, and reasonable care will conduce to long life.

Kennelly.—These instruments have just been placed upon the market, and their accuracy and excellence of construction will place them in the very front rank of electrical measuring instruments. They are supplied with a powerful permanent magnet with large flat superposed pole-pieces, one-sixteenth of an inch apart, in which space revolves an aluminium disc on which are wound radially the armature coils. Two differently wound springs hold the pointer at zero, as in the Weston, and the jeweled bearings of the suspension system are of the best. The meter on test is not a shunt instrument, and its resistance is very low. Its scale is even throughout, but might be made more clear if laid out on the same plan as the Weston, and more convenient if divided into spaces of one milliampère from 0 to 25. Although this instrument may be used in any position, it is preferable that it be used *flat* as it is then more delicate. It is uninfluenced by outside magnetic forces, and is very sensitive to minute changes in amount of current passing through it, but in common with the Weston is practically "dead beat," coming directly to the correct position and remaining there. It indicates with current passing in but one direction. Put up in a handsome wooden case, it can be transported with ease, and is a very substantial and good all-around meter.

Vetter.—This instrument is of the upright galvanometer type, with needle attached to magnetized armature suspended within a coil through which the main current passes. The scale is not very clear, even or finely divided, and requires close inspection for fine readings. Its internal resistance is low; it must be leveled before using; it is sensitive to outside influences (magnetic) and the needle swings interminably before a reading can be taken. In the instrument on test there are two scales, one of 25 milliampères and one of 250 milliampères, the latter made available by the use of a shunt. It indicates with current passing in but one direction, but is a portable and fairly substantial instrument.

Flemming.—This instrument is also of the upright galvanometer type. Its scale is far from convenient, reading up to 10 only, with shunt-multiples of 10 and 100. It is extremely difficult to take a close reading above 10 milliampères. Internal resistance is low; reading can be taken with current going either way; needs careful leveling; suspension system is bad; is sensitive to outside magnetic influences; is portable and fairly substantial.

Waite & Bartlett.—This meter is of the horizontal galvanometer type and needs extreme care in leveling and adjusting. Being suspended on a point, its needle is very sensitive to motion and external magnetic influences. Its scale is uneven and difficult to read, being very close on highest and lowest readings. Its shunt-multiple of 10 increases its range from 50 to 500 milliampères, and does not help its accuracy. Internal resistance is low and indications are made in either direction, but it is not portable, is easily put out of order, and can be read in but one position.

Queen.—This handsome instrument combines many good points, being arranged so that it may be read laying flat, or suspended vertically, or set at an angle. It reads both ways, and its scale is clear and practically uniform. Its mechanism comprises a compound permanent magnet between the poles of which is pivoted the armature coil through which the current to be measured passes. The armature shaft is delicately geared to the needle shaft, and all bearings are jeweled. In shipping the meter for test, Messrs. Queen & Co. apologized for the hasty manner in which the instrument had been assembled and tested, in order that it might enter into the test, as this type of meter is just being brought out for the market. On arrival it was found to be three-fourths of a milliampère off zero, and this was taken note of in the readings made from it. Its internal resistance is low; it is portable and substantial, but is influenced to a slight degree by outside magnetic influences.

Galvano-Faradic.—This meter is of horizontal galvanometer type and careful adjustment for level and zero is necessary. The latter is rendered easy by the rotability of the dial part of the meter. Being freely suspended on a point, its needle is very sensitive to motion and outside magnetic influences. The scale is divided so as to indicate both ways, but the scale divisions are uneven and very small. Internal resistance is very low and no shunt is employed. This instrument is light in weight and is easily carried, but can readily get out of order.

Gaiffe.—This is also of horizontal galvanometer type, careful adjustment for level and zero being necessary. It is very sensitive to motion and outside magnetic influences. Its dial is of brass and is hard to read. The scale is small and uneven and reads both ways. It was hardly fair to put this little instrument in test with the others, as it has been in use at the Clinic for years, while all the others have been furnished for this test by the makers.

The Test Proper.

In making the comparative test of the meters, connection was made from twenty standard Leclanché cells of battery through a variable resistance to the meters. These were, of course, all placed in series, so that the same current would pass through each, and the question of relative internal resistances would play no part. Various instruments connected *singly* to the same number of elements would show *different* indications, according to the internal resistances of the several meters.

The nine instruments tested were set up on a long table in the order in which they appear in the accompanying schedule showing the results obtained. As great care was taken in removing disturbing magnetic influences as possible, and those meters requiring it were carefully leveled and adjusted. The proximity of the meters to each other affected some, unavoidably though unfortunately, on account of the magnetic influence they extended. This is a strong argument against the use of such meters, however, as it is far from desirable that the operator should be obliged to consider whether his coils or other appliances are affecting the accuracy of his meter readings, vital as this accuracy is to his success.

A scrutiny of the tabulated results of the test will show the remarkable closeness with which the Weston and Kennelly meters tallied throughout—remarkable as contrasted with the operations of some of the others. The range of the Queen meter is to 50 milliampères only, and despite the disadvantages under which it labored, and which are mentioned above, it occupies a very honorable position.

In the test for undue heating, the meters were divided into groups according to their ranges of scale, and each group was tested for three-quarters of an hour at its highest capacity. It is gratifying that a careful examination revealed no appreciable tendency in this undesirable direction in any of the meters.

The Committee realizes the necessity that exists of having the Association adopt a standard meter, and believes such a standard could now be selected, and it is earnestly recommended that the Association take steps to this end. The figures of the test speak for themselves.

In adopting a standard meter, it is not only necessary that as an Association we should each and all use meters of the same make, but that that meter should be a standard instrument, which when registering 5 milliampères in the hands of one person, will not register 5 and mean 7 with another. Physiological experiments and clinical records are valueless so far as scientific accuracy is concerned without such a standard meter. So far as your Committee have examined and tested them the Weston and Kennelly best fulfill these requirements.

Resistance in Series with 20 Cells Leclanché Battery and Meters.	Internal Resistance.	Readings in Milliamperes.										
		4800	2720	1710	1400	1000	650	475	310	220	136	91
Weston												
Scale 0 to 10	16.599	6	10									
" 0 to 500	.362			15	20	25	40	50	75	100	150	200
" 0 to 300	.199	6	10	15	20	25	40	50	75¼	100½	153	201
Kennelly												
Scale 0 to 200	1.30	6	10	15	20	25	40	50	74¾	99½	149	199½
Queen	*	5¾	9¼	15	20	25¾	45¾	52				
Vetter	*	6½	10¾	16	21	31	45	62	89	115	168	218
Flemming	*	5½	8½	15	30	28	36	46	68	88	160	220
Waite & Bartlett	.130	6½	12	19½	24	36	50	65	89	120	195	210
Galvano-Faradic	*	5½	9	13	17	24	35	40	68	90	145	200
Gaiffe	*	5½	8	13	17	25	34	40				

* Not given.

In making this report, the Committee on Meters desires to express its sense of obligation to the following manufacturers for their courtesy in submitting samples of their apparatus for its inspection: Weston Electrical Instrument Co., Newark, N. J.; Edison Electric Manufacturing Co., (Kennelly) New York city; Messrs. Waite and Bartlett, New York city; Messrs. Queen & Co., Philadelphia; Mr. Otto

Flemming, Philadelphia; Galvano-Faradic Co., New York city; and J. C. Vetter & Co., New York city.

[SIGNED] MARGARET A. CLEAVES, Chairman.
HERMAN E. HAYD, M.D.
W. J. JENKS, Electrical Engineer.

DISCUSSION.

DR. HERDMAN thought that two of the meters had not been sufficiently long on the market to enable one to draw correct conclusions, and he was of the opinion that the Association was not yet ready to adopt a standard meter. The Committee should be continued.

DR. MORTON hoped a standard meter would be adopted this year. In answer to a question as to the Gaiffe meter, he said it belonged to the horizontal type, which is easily disturbed, although no doubt quite accurate; electrical experts found this class not satisfactory. It is very desirable sometimes to measure small current strengths accurately in, for instance, metallic electrolysis. Thus, in the urethra with 2 milliampères the instrument is movable, but with 5 milliampères the instrument may become strongly adherent, and the foundation laid for an organic stricture.

DR. C. R. DICKSON of Toronto, suggested adopting a standard of construction without mentioning any particular manufacturer's instrument. He recalled a patient with an eye affection, who was sensitive to even one-fifth of a milliampère.

DR. MORTON moved the adoption of the Kennelly meter.

DR. H. E. HAYD of Buffalo, in seconding this motion, said the Committee's report was very complete and satisfactory, and there was no advantage in further procrastination.

DR. GEORGE J. ENGLEMAN of St. Louis, asked if the different purposes to which the meters are to be put had been considered by the Committee. This he considered important, for a meter suitable for registering currents of 300 milliampères would hardly be very accurate for currents of only 2 to 5 milliampères. He would like to know if any one meter would embody all these points.

DR. CLEAVES replied that the Kennelly meter was absolutely accurate in all portions of the scale.

DR. MASSEY thought it impossible for a long range meter to be accurate for small fractions of a milliampère. We should have a meter for high currents and one for low currents.

DR. MASSEY then moved to amend Dr. Morton's resolution as follows:

Resolved, That this Association adopt the type of meter shown in the meters of Weston and Kennelly, and recommend them to the profession.

DR. MORTON said that a meter could be calibrated from very low fractions of a milliampère to 300 or 500 milliampères if desired; it was a mere detail of manufacture. He did not consider it unnecessary discrimination to take the responsibility of discriminating between two meters.

DR. A. LAPTHORN SMITH was in favor of indorsing the action of the Committee, and adopting the meter recommended in the report, provided it was not patented.

DR. HERDMAN said that the Committee had dealt with three meters of a certain type which they considered best. The Association would probably agree with them that the galvanometer meter had many serious objections, and that the other type which they had examined has many disadvantages. One of these meters had been on the market for many years, and had been used by many physicians who were therefore familiar with its good qualities. The Kennelly meter was very similar in construction, but apparently more cumbersome. Again, he had been informed that Mr. Kennelly's meter was considered a legal infringement on the Weston meter. It should not be forgotten also that another meter, although hastily prepared for the tests, acted so well that it is justly entitled to a further opportunity of being tested. The members of the Association individually should become familiar with these instruments before voting on the adoption of one or the other. The Weston meter he had used for years, and considered excellent, but it is quite expensive, and this is a drawback, because whatever meter is adopted it should be generally used.

DR. FRANKLIN H. MARTIN of Chicago, did not think the Association was yet prepared to state that the galvanometer meter should be legislated out of existence, and that it is not practicable to make such a meter as good as the other class of meter. We should hardly recommend this meter which closely resembles the Weston meter, when the latter has been in the hands of many of us for many years. If we should adopt a meter at all, and he did not approve of this, it should be the Weston meter. The Association should not make itself a laughing-stock of the profession by adopting the Kennelly meter until after more careful consideration. The speaker therefore suggested that the Committee be continued, and that they secure meters from all standard firms, whether these firms respond or not to the Committee's invitation.

DR. MORTON wished to declaim any personal interest in any one meter. He predicted that this question of meters would not be finally settled within the next ten years, if the interests of the different manufacturers of meters were to be espoused by members.

DR. MASSEY then withdrew his amendment.

On motion of DR. NEWMAN, the report of the Committee was accepted, and the Chairman of the Committee continued.

DR. BISHOP then moved that the consideration of Dr. Morton's motion to adopt the Kennelly meter should be postponed until the next meeting. Carried.

3. On Static Machines.—DR. W. J. MORTON reported that a number of questions had been sent out, but no response had been received. The Committee recommended for the present, that electro static machines adapted to medical practice, should not have less than four revolving *glass* plates, whose diameters should not be less than twenty-six inches.

DR. W. B. SPRAGUE of Detroit, asked why *glass* plates were specified.

DR. MORTON replied that it probably made but little difference, but ebonite had not been used very extensively. In practice it had been found that this number of plates is necessary for obtaining a proper quantity or current strength.

On motion, the report of the Committee was received, and the Committee continued.

On Constant Current Generators and Controllers.—DR. W. J. HERDMAN made the report:

REPORT OF THE COMMITTEE ON CONSTANT CURRENT GENERATORS AND CONTROLLERS, PROF. W. J. HERDMAN, CHAIRMAN.

The plan which the members of your Committee had in mind when this work was assigned to them was:

1. To undertake to learn what methods were in use by physicians to supply themselves with continuous currents.

2. To get the opinions of physicians regarding the methods they were employing.

3. To put these statements and opinions to the proof by comparative tests in the laboratory,—employing in this work standard measuring instruments and subjecting the apparatus tested to conditions as nearly as possible identical with those that attend its use in the physician's office. What has been done up to the present time is mainly in the line indicated under the third head, circumstances having conspired to delay the necessary correspondence which would furnish the information sought for from physicians using continuous currents in their practice. Very little progress was made by the Committee until the Executive Council issued the circular of March 2, 1893, asking for the coöperation of manufacturers, physicians and others in the work of this and other committees. Since that circular was sent out the Committee has had no difficulty in getting such batteries and apparatus for test and examination as were thought desirable. We have had the following primary batteries submitted for test by the manufacturers or dealers, and the work is still receiving daily attention according to the plan we have indicated:

Law Battery (Law Bat. Co., New York), 50 cells; Fitch Perfect Battery (Galvano-Faradic Co., New York), 50 cells; Laclede Battery (L. Carb. & Electric Co., Ind.), 50 cells; Leclanché Battery (AXO) (L. Bat. Co., New York), 50 cells; Partz Battery (No. 5) (S. S. White Dental Mfg. Co., Philadelphia), 50 cells; Partz Battery No. 3, 30 cells; Edison-LeLande (Edison Mfg. Co., New York), 9 cells; Samson Battery, 2 cells.

Dry Cells.—Chloride of Silver Dry Battery, Baltimore, Md., 50 cells; Mesco Dry Battery, 2 cells; Ajax, 5 cells; Burnley, 2 cells.

In every instance the manufacturers or dealers have been asked to furnish specific directions as to the proper manner of setting up and care of their batteries, and these directions have been rigorously carried out. Physicians purchasing batteries would receive and be guided by such directions and this course we have regarded as necessary in order to do no injustice to the form of battery under investigation. We have neither attempted by any devices of our own to improve or detract from their efficiency.

We herewith submit a record of these tests made to date on the larger plants furnished us. The only battery containing a sufficient number of cells to be placed alongside of these here reported is that of the Chloride of Silver Co. This has not been included for two reasons: 1, it was received too recently for much work to have been done with it, and 2, it is a portable dry battery designed to meet peculiar needs and should, in our opinion, be reported in comparison with other portable batteries and not with stationary plants. As to others that have been sent us and are not here reported, no one form has been sent in sufficient number to generate continuous currents of sufficiently high voltage for physicians' use. We have stated to manufacturers and others that physicians as a rule require an electro motive force of from fifty to seventy volts to accomplish the work they are required to do in electro-therapeutics.

BATTERY TESTS MADE IN THE ELECTRO-THERAPEUTICAL LABORATORY, UNIVERSITY OF MICHIGAN, SEPT. 5, 1893.

W. J. HERDMAN, DIRECTOR.

Battery.	Date.	Initial Voltage.	Resistance.	Current.	Time.	Final Voltage.	Volt-Meter. M. A. Meter.	Remarks.
Partz ac'd gravity	7-22-93	60	2600	.027	30 m.	53	Weston.	(30 Cells).
"	8-15-93	57.6	1600	.0385	15 "	56.6	"	"
"	8-16-93	57.5	1075	.055	15 "	56	"	"
"	8-17-93	57.4	1224.92	.057	10 "	56.1	"	"
"	8-18-93	57.3	2450.4	.025	20 "	56.4	"	"
"	8-22-93	57.1	100	.340	10 "	53.2	"	"
"	8-24-93	56.4	2250.47	.025	10 "	56.6	"	" (Rise in E.M.F.)
"	8-26-93	56.6	4700.87	.012	5 "	56.3	"	"
"	8-29-93	56.3	1100.0	.0045	20 "	56.1	"	"
"	8-30-93	56.5	2000	.027	15 "	55.3	"	"
"	9-1-93	56.2	2000	.028	15 "	55	"	"
Partz No.5	7-24-93	53	2400		15 "	49	"	(38 Cells).
"	8-15-93	69.8	1600.2	.044	15 "	62	"	(50 Cells).
"	8-16-93	69	3100	.016	10 "	67.5	"	"
"	8-17-93	69	1225	.004	3 "	69	"	"
"	"	69	1225	.0445	10 "	61.3	"	"
"	8-18-93	68.8	2450	.027	20 "	60	"	"
"	8-22-93	66.4	100	.270	10 "	45	"	"
"	8-24-93	64.6	2250.68	.0195	10 "	52.6	"	"
"	8-26-93	66	4700.83	.012	5 "	60.1	"	"
"	8-29-93	66	11000	.0055	20 "	61	"	"
"	8-30-93	64	2000	.031	15 "	54	"	"
"	9-1-93	63.8	2000	.0335	15 "	52.2	"	"
Laclede	7-12-93	72.5	1000	.065	10 "		"	"
"	7-17-93	61.5	2600	.025	10 "	60	"	"
"	"	68	140	.400	10 "	59	"	"
"	7-24-93	67	1100		15 "	64	"	"
"	7-28-93	67	1800	.038	30 "	50	"	"
"	8-15-93	66.2	1600.1	.0375	15 "	64.5	"	"
"	8-16-93	66	1075	.056	15 "	63.2	"	"
"	8-17-93	65.9	1225	.049	10 "	63	"	"
"	8-18-93	66.4	2450.92	.024	20 "	64.4	"	"
"	8-22-93	65	100	.550	10 "	52	"	"
"	8-24-93	64.5	2250.19	.0175	10 "	62.6	"	"
"	8-26-93	65.4	4700	.011	5 "	64.8	"	"
"	8-29-93	66.3	11000	.005	20 "	65.8	"	"
"	8-30-93	64.4	2000	.031	15 "	62.5	"	"
"	9-1-93	61.8	2000	.007	15 "	60	"	"
Axo.	7-28-93	75	200		30 "	60	"	"
"	8-15-93	76.4	1600.1	.042	15 "	73.2	"	"
"	8-16-93	76	1075.92	.062	15 "	71	"	"
"	8-17-93	75.8	1224.92	.0645	10 "	71.8	"	"
"	8-18-93	75.6	2450	.0325	20 "	73	"	"
"	8-22-93	76.5	100	.370	10 "	76.1	"	"
"	8-24-93	75	2250.47	.032	10 "	72.2	"	"
"	8-26-93	75.6	4700	.013	5 "	74	"	"
"	8-29-93	75.4	11000	.0055	20 "	74.3	"	"
"	8-30-93	75.3	2000	.033	15 "	72	"	"
"	9-1-93	75	2000	.035	15 "	74.2	"	"
Fitch.	8-15-93	67.6	1600.1	.038	15 "	63.4	"	"
"	8-16-93	66.4	1075	.067	15 "	64.6	"	"
"	8-17-93	66	1225	.049	10 "	64.6	"	"
"	8-22-93	66.6	2450	.0308	20 "	64	"	"
"	8-22-93	65	100	.500	2 "	61.5	"	"
"	8-24-93	61.5	2250.19	.025	10 "	65.7	"	"
"	8-26-93	67	4700.87	.0165	5 "	66	"	"
"	8-29-93	67.3	11000	.0055	20 "	66.2	"	"
"	8-30-93	66	2000	.031	15 "	62.6	"	"
"	9-1-93	64.3	2000	.0305	15 "	63	"	"
Law.	7-8-93	69	1000	.060	10 "		"	"
"	7-15-93	59	2600	.025	12 "	56	"	"
"	7-21-93	59.5	1100	.055	15 "		"	"
"	8-15-93	67.8	1600	.054	15 "	54.5	"	"
"	8-16-93	67	1075	.064	15 "	49.3	"	"
"	8-17-93	66.4	1225	.062	10 "	50.4	"	"
"	8-22-93	63.1	2450.4	.0425	20 "	54	"	"
"	8-22-93	62.4	100	.380	12 "	45.4	"	"
"	8-24-93	65.3	2250.47	.036	10 "	60.8	"	"
"	8-26-93	67	4700	.014	5 "	61	"	"
"	8-29-93	67.3	11000	.0075	20 "	61.8	"	"
"	8-30-93	66.9	2000	.036	15 "	54	"	"
"	9-1-93	64.6	2000	.035	15 "	60.2	"	"

We are engaged in testing the cells that have been sent to us in less number than fifty for voltage, current, recovery and constancy, but it would be much more satisfactory if we had a sufficient number of each to put them upon such work as is actually done by physicians' batteries. Only comparisons of this character are of much value in determining their efficiency for our use.

Of current controllers and regulators, to be used in connection with primary battery currents, the Committee has received the following:

Law Battery Co.: McIntosh Battery Plate for fifty cells containing current selector, wire rheostat, and numerous conveniences for controlling the current.

Galvano Faradic Co.: Water rheostat of unique pattern, simple and convenient known as the Criado Rheostat.

Chloride of Silver Co.: A special current selector and rheostat used in connection with their portable battery.

Although each and all of these have been examined, somewhat, by the Committee, and their action noted in controlling the current, we are not yet prepared to formulate a report concerning them.

With secondary batteries we have so far done nothing—none have been submitted to us for examination and no report has been received from the members of the Committee to whom this part of the work was specially assigned.

The busy physician who knows the value of electricity in aiding him to cope with disease and who wishes to use it, finds himself greatly handicapped for want of the special knowledge of electro-physics required, and the time and trouble necessary to keep his constant current apparatus in good working condition, if he is depending upon primary or secondary batteries as a source of current, and it is but natural that he should cast about for some method by which he could rid himself of these annoyances and still retain the advantages of this aid to his therapeutic work. In commercial work, the dynamo has so largely superseded all other sources of electric generation that the thoughts of the physician have also turned to it for his supply, and many ingenious contrivances are being devised to control and adapt these currents to his needs. The first questions that ought, in the natural order, to be settled before further attempts are made in this direction are, what is the physiologic action upon the human body of these currents? and does a constant current generated from a dynamo act similarly upon the living animal tissues to a constant current of equal amount and pressure generated from a primary or secondary battery? These questions are fundamental and should receive an early reply from the physiologist and the electro-therapeutist. The latter, are already engaged in interrogating these currents in many places where they are available, and already the incandescent light current, the street car current and the current furnished at a central station for various commercial purposes are finding their way into physicians' offices and in one or another way are being adapted to their uses. The convenience of such a source of supply of electricity to physicians is self evident. We, therefore, as a Committee, look with interest and expectancy to the devices that are being constructed with the view of aiding the physician to utilize these currents. Several of these have been placed in the Committee's hands for investigation, and their range of efficiency is now being determined. Those deserving mention are:

The Gish Ideal Rheostat; the Vetter Current Adapter; the Knapp Rheostat; the K. A. P. Rheostat; the McIntosh Hyoro-Platinum Rheostat, and the McIntosh Current Controller.

If sufficient time had been given us we would have been pleased to furnish to the Association a description of these instruments, and an outline of the character of work they each can accomplish, for it seems to us that this is the trend electro-therapeutic apparatus is destined to follow. One peculiar form of apparatus has been sent to the Committee for investigation within the past two weeks, but we have not yet had the opportunity to examine it. It is an arrangement devised by Dr. Meeker of Newark, N. J., for subjecting the body to the action of electric light for curative purposes. Large claims are made by its inventor for its therapeutic efficiency. This is an interesting field for investigation, though the work may be a little out of the line of that assigned to this Committee. The action of the electric light in modifying the conditions of the animal organism is an interesting field for research, and we are disposed to recommend the appointment of a special committee to take this work in charge. If such a committee is appointed we would take pleasure in transferring to it this apparatus of Dr. Meeker.

The plan of this Committee, as it was outlined at the beginning of this report, you can readily see contemplates the expenditure of much time and labor and as no funds

have been placed at its disposal it must be a labor of love, and unselfish devotion to the interests we have in charge. If it is thought best by the Association to continue the duties of this Committee, it should be constituted of persons whose hearts are in the work and who are willing to give a large share of their personal attention to it.

DR. BISHOP moved that the report be accepted, and the Chairman of the Committee continued. Carried.

V.—ON ELECTRODES.

DR. A. LAPTHORN SMITH read the report of the Committee of the American Electro-Therapeutic Association on standard electrodes.

Mr. President and Fellows:—Your Committee has realized the fact that much of the diversity of results obtained by a given method of applying electricity to a certain diseased condition depends upon the variety of instruments employed and the lack of any standard of size or shape of electrode, upon which much of the good result depends. For suitable electrodes, for the application of the current at the active pole and its diffusion at the indifferent pole are among the fundamental requirements for successful electro-therapy. We have excellent standards of quantity and intensity which are accepted all over the world, and it is equally desirable that we should have standard electrodes, the mere mention of which would mean the same thing in every land. It is also very desirable that electrodes, as indeed all other electrical apparatus, should be simplified and their manufacture and maintenance cheapened without, however, at all impairing their efficiency. Many practitioners have, no doubt, abandoned the use of electricity, not because they were dissatisfied with what it could do for them, but because their apparatus has got out of order, and the productions of each manufacturer differing in size, he has been unable to have it repaired without sending it at great expense to the particular manufacturer who produced it. If all parts were made interchangeable and of uniform sizes the nearest manufacturer could supply missing parts from stock at a cost very often of as many cents as it would otherwise cost dollars. With one size of the same material only 50 ma. can be borne, while with another size a dose of 250 is possible With one size the result is successful; with the other it is failure. At the last meeting, there was such a general consensus of opinion that some standard sizes and makes of electrodes should be adopted, that a committee was appointed to report upon the matter at this meeting. Since commencing their investigations, the committee has received valuable assistance from Dr. Waite of New York, from Mr. Ness, electrical manufacturer of Montreal, and from many others, and has observed abundant proof of the interest centering in its work.

After some correspondence between the several members of the Committee, it was decided that the following points should be considered:

I.—INACTIVE ELECTRODES.

1. What is the best material in general for the ground-work of the electrode, and what in special cases?
2. How may it best be connected with its rheophore?
3. What is the best material for covering its conducting surface?
4. When necessary how may it best be insulated?
5. In what way may it be kept warm and moist when not in use, should this be necessary?
6. What should be accepted as standard sizes and shapes and how best may they be designated?
7. What other points require to be considered?

II.—ACTIVE ELECTRODES.

1. What is the best material in general and in special for the ground-work of the electrode? *a.* When used at the positive pole? *b.* When used at the negative pole?
2. How may it best be connected with its rheophore?
3. What is the best material to cover its connecting surface when necessary, in general and in special cases?
4. How may it be insulated when necessary?
5. What is the best form of construction where flexibility is required for tortuous canals?
6. What shall be considered the standard shapes and sizes? What scale shall be adhered to when considering the matter; how may their surface area be estimated when they are of irregular shape?
7. When designated by numerals as to size and surface, how may such best be expressed when stamped or otherwise marked on them?
8. How may simplicity of construction best be obtained and cost of manufacture reduced without impairing efficiency?
9. How may facility of cleansing and rendering aseptic best be achieved?
10. What other points to be considered?

III.—ACTIVE AND INACTIVE ELECTRODES.

1. Are the terms, active and inactive, the best standard terms we can employ?
2. In the case of both active and inactive electrodes, should not the thread of all screws used in construction as means of attachment, also all plugs and sockets, etc., be of a standard gauge, that electrodes might be used with attachments of all makes, etc., and to facilitate repair? We have come to the conclusion that the best material for the ground-work of electrodes is copper wire gauze, because it possesses sufficient firmness to support the conducting material, and also because it is sufficiently pliable to mold itself to the inequalities of the tegumentary surface, which is not the case with lead or zinc plates. It also offers a good surface to which the binding post or conducting wire can be soldered. We think that this material would meet the requirements for a groundwork for a dispersing or inactive electrode in every possible case.

How may it best be connected with its rheophore? In order that the rheophore may carry the current from every part of the electrode, the best way to connect the latter to the former is by means of a bright copper wire, soldered over the whole of its length to the previously brightened wire gauze, with which it should be in contact the whole width of the electrode, thus insuring active contact with a great number of the wires of its mesh. The copper wire should terminate in a binding post to which it should be firmly soldered, and which binding post should be of the size known as No. 6–32, which is largely used by telephone companies throughout the world, and which we recommend as the standard screw for all electrical apparatus, so that if the screw be lost it could be easily replaced without changing the binding post. We also recommend that the ordinary tips of binding cords be abandoned and replaced by screw contact posts on all electrodes.

3. The best material for covering the conducting surface of the dispersing electrode is a layer of white, sculptors' clay, half an inch thick, moistened to the consistency of soft putty. It is desirable that the conducting material should part with its water only enough to moisten the epidermis, but not enough to wet the patient's clothes. This requirement renders absorbent cotton sponge punk pans of water covered with animal membrane objectionable. After having considered the claims of all other substitutes for clay, we have come to the conclusion that the latter is the only substance which can be rendered moist enough to conduct without wetting the clothes. When covered with a layer of lintine and one of absorbent gauze it does not soil the skin nor clothes. Its surface can be kept clean by sponging it over with soapsuds before each application. The copper wire gauze groundwork or backing can best be insulated with common table oilcloth a little larger than the wire gauze, to the edge of which the layers of absorbent cotton can be stitched all around.

This material can best be kept warm and moist when not in use in the following manner: a zinc pan, one foot wide, a foot and a half long and three inches deep, is made with four stout wire feet in order to raise it eight inches from the ground. This is half filled with hot water, and a small sized Bunsen's burner is placed under it, which is turned so low as never to raise the water over 100 degrees F. A perforated zinc tray is placed an inch above the level of the water on which the electrodes are kept face downwards. The slight evaporation from the water will keep them always moist, warm and ready for use. Another expedient is the hot water bottle, already widely known. It is greatly to be desired that standard sizes be adopted; we find that after experimenting and having consulted with others of great experience, that three sizes of dispersing electrodes would accomplish all the purposes for which this electrode is ever required. They should all be one foot long, while the widths should be respectively three, six and nine inches; thus three of them could lie, side by side, in the above-mentioned trays; they would give the following surface areas: No. 1, 36 square inches; No. 2, 72 square inches; and No. 3, 108 square inches.[1] With the latter, 250 ma., which is the highest strength ever required, can be easily borne without burning the skin.

(To be continued.)

[1] We recommend that the metric system should be used throughout and the above-mentioned converted thereto.

The New London Medical Society Does not take a Back Seat. *Editor Bulletin:*—My attention has been directed to an article appearing in your columns a few days since, the writer of which seems to have been laboring under misapprehensions that will bear correcting.

As the author of the original article, a notice of which was honored by being copied from your columns into those of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and taken exception to by Dr. E. L. B. Godfrey of Camden, N. J., I will state that no claim was made for the profession in New London County as priority in taking the initiatory step toward professional organization, excepting as confined within the colony of Connecticut.

But as Dr. E. L. B. Godfrey has seen fit to champion the cause of the New Brunswick (N. J.) Medical Association by casting his gauntlet into the Connecticut arena, it gives me pleasure to return him the same upon the point of the following statement: "The original paper referred to as being signed by the Norwich physicians is "Dated at Norwich the 27th day of Sept., 1763," nearly three years before the New Brunswick rally called for by the advertisement in *The New York Mercury* bearing date of "East New Jersey, June 27th, 1766."

In behalf of the New London County Medical Association we do not feel like accepting the suggested back seat unless proffered in a chronological sense. Respectfully.

JULIAN LA PIERRE.

—*Norwich* (Conn.) *Bulletin*, Nov. 15.

NECROLOGY.

Dr. Louis Reinhard of Milwaukee, November 20.

Dr. J. Frank P. Sher, of Philadelphia, November 15.

Dr. C. S. O'Brien, of Bloomsburgh, Pa., November 16.

Dr. John Frissell, of Wheeling, West Va., November 15, aged 84.

Dr. D. J. Cummings, at Farmington, Minn., aged 75, November 9.

Dr. E. S. Cooper, one of the oldest physicians in the State, died at his home Galesburg, Ill., aged 76 years. He had been a resident of Galesburg for fifty years.

Dr. W. A. Pugh, died at Rushville, Ind., after a week's suffering. He was stricken with paralysis, November 6, gradually sinking until the end. Dr. Pugh was born in Rushville, March 7, 1829.

Dr. Addison Dold of Augusta County Md., died November 8, near Tinkling Spring. He was more than four-score years of age, and was formerly a practicing physician.

Dr. Henry Chester Parry, died at Torwigsburg, Pa., November 8. He was a son of the late Judge Edwin Owen Parry, and served as surgeon in the United States Navy. He was retired several years ago. He was a man of culture and high literary tastes.

Dr. J. C. Murray, died at his residence, "Cedar Park," near Annapolis, November 11. Dr. Murray was in his seventy-eighth year, and has resided in Anne Arundel County all his life with the exception of some years previous to and during the war.

Dr. Leon Le Fort, who died at Paris, October 19, was a professor of clinical surgery, and a popular author on military and naval hygiene, and the management of hospitals. He was joint author with Malgaigne of a text-book on operative medicine. Some of his brochures were honored by foreign reproduction. He visited America as a delegate to the Ninth International Congress.

Dr. Eugene Horwitz of Baltimore, Md., died at his home November 10. He had pneumonia, which attacked him while on his return from the World's Fair some days ago. Dr. Horwitz was born in Philadelphia, December 7, 1863, at the residence of his grandfather, the celebrated surgeon, Samuel D. Gross. In accordance with his expressed wish, his body will be cremated at the Loudon Park Crematory.

Dr. A. P. Meylert, 51 years old, died in Wilkesbarre, Pa., November 11. He was born in Laporte, Sullivan County. He was educated at the University of Lewisburg and afterward entered the College of Physicians and Surgeons in New York, where he was graduated. Soon after the breaking out of the civil war he was appointed Medical Director of the Army of Ohio under General Sherman, on whose staff he was during all his campaigns.

Dr. John M. Keating, LL.D., formerly of Philadelphia, a physician and medical author of national reputation, died at Colorado Springs November 17. In 1879 he was a member of General Grant's party on a visit to India and Southern Asia. He is best known to the profession by his editorship of the "Cyclopedia of the Diseases of Children." He was the founder and one of the editors of the *International Clinics* and of the *Climatologist*.

Dr. W. S. Leach, of St. Joseph, Mo., the oldest physician in the city, died November 21. Before the war he was the largest slave holder in the State. He was a very eccentric man, and after his slaves were liberated erected little shanties all over the city which he rented to them for a few dollars a month. Many of these houses are still standing on land worth hundreds of dollars a foot and occupied by some of his old slaves or their descendants.

Dr. Wm. Haslet Clendinen, Jr., of Baltimore, who died at the age of 60 years, was the son of a Maryland physician bearing the same name. He was an alumnus of the University of that State, class of 1850. As quarantine physician from 1862 to 1865, he passed through peculiarly arduous experiences on account of an epidemic of smallpox among the soldiers of the Union Army under his charge and received public commendation for his fidelity and energy. He was Assistant Surgeon, with the rank of Major, until the close of the war. He was the founder of the St. Barnabas Church Dispensary, and conducted it for two years.

Dr. Charles Warrington Earle, President of the Chicago Medical Society, died at his home in Chicago, November 19.

He was born in Westford, Vt., April 2, 1845, and removed to Illinois with his parents in 1854. At the age of 16 he enlisted in the 15th Illinois; was injured while loading a transport. In ten months he recovered and reënlisted in the 96th Illinois; was made Sergeant and promoted to be First Lieutenant. Shortly after the battle of Chickamauga he was taken prisoner, while serving in General Gordon Granger's division. His bravery and gallant action in battle was the subject of compliment, and he was one of the famous band of prisoners that escaped from Libby Prison through a tunnel. He returned to his company and served in the battles of Resaca, Kenesaw Mountain, Atlanta, Franklin and Nashville. He was brevetted Captain for bravery in the engagements named.

After the war, he entered Beloit College, Wis., where he remained three and a half years, after which he entered Chicago Medical College and was graduated therefrom in the class of 1870.

He was once President of the Illinois State Medical Society, and at the time of his death President of the Chicago Medical Society, Dean of the Woman's Medical College, President of the Board of Directors and a Professor in the College of Physicians and Surgeons of Chicago.

His good fellowship made him an agreeable companion everywhere, and he was a member of a great many local societies. In person he was impressive, and deservedly popular. His death leaves a vacancy in Chicago medical circles that will be difficult to fill.

The funeral took place Nov. 22, 1893, and was attended by representatives of the medical colleges and societies of the city.

Dr. D. Scott Moncrieff.—In the JOURNAL of October 28, we announced the death of Dr. D. S. Moncrieff by drowning in the Gulf of Tartary.

Something more than a passing notice is due the memory of this scientific physician. We have been furnished the following:

"Dr. Moncrieff was born in Edinburgh, Scotland, on the 9th of February, 1865. He was the younger son of D. Scott Moncrieff, Esq., W. S., Edinburgh. He was educated at the principal schools and colleges in Great Britain, having also passed a two years' course at Leipsic, Germany. He also took his M. D. degree at Harvard in 1889. He was an apt student, and came out of his studies with flying colors. Dr. Moncrieff was a good athlete, and obtained many prizes while pursuing his studies. He held the Royal Humane Society's medal for saving a man's life who had fallen overboard while the steamer was about to sail.

"His professional career started in with the appointment of Surgeon to the Anchor line steamer *Armenia*, plying between England and Calcutta. He next acted as Surgeon on the *Ethiopia*, of the same line, which sailed between Glasgow and New York. From there he was appointed as Surgeon in the Northwest mounted police in Canada. Leaving that place Dr. Moncrieff came to Portland, and soon after he was appointed as Acting Assistant Surgeon to the Fourth Cavalry Regiment, stationed at Walla Walla. While here he did a great deal of important work among the Indians at the different reservations. Last, he was requested by Professor Putman, Chief of the Department of Ethnology at the World's Fair, to go to Siberia to gather statistics and study the habits of the natives of Kamschatka. He received a special passport from the Secretary of State, besides several influential letters from important officers of the Russian Government in this country. Dr. Moncrieff left on the steamer *Kotic*, in May last, and reached Vladivostock, where he met with a royal reception from the people, besides receiving every assistance in his work. Everything pointed to a successful termination of his mission when his young life was suddenly cut short. The news was received with much regret, as Dr. Moncrieff was a favorite with every one that came in contact with him. He was an exceedingly bright young man, and very able in his profession, being Assistant Professor of Theory and Practice of Medicine in the Medical Department of the University of Oregon.

MISCELLANY.

New Hospital.—A new hospital is to be established at Macon, Ga., and one at Oil City, Pa.

Dr. W. P. White has been appointed Health Officer for Louisville, vice Dr. Galt, deceased.

Typhus Fever prevailed to an alarming extent in Zacatecas, Mexico, during the summer months just closed.

The Bill to Establish a State Board of Health in Georgia is opposed by Dr. Harris, and by Dr. Brunner of the Savannah Board.

Changes of Address.—Dr. James M. Ayers to 164 Plum Street, Cincinnati.

Dr. Vincent L. Hurlbut to Grand Pacific Hotel, Chicago.

Yellow Fever.—Thirteen new cases of yellow fever and one death therefrom were reported at Brunswick, Ga., on November 8, twelve new cases November 11, and five new cases November 12.

To Have an Addition.—The trustees of the Massachusetts State Insane Asylum, have voted to use the appropriation of $50,000 passed by the last Legislature for the purpose of erecting an addition which will accommodate fifty patients.

A Banquet to Dr. Pozzi.—A farewell banquet was tendered the eminent Parisian Professor on his way through New York. The host was Dr. Paul F. Mundé, and the feast was served at the Union League Club. Among the other guests were many leading gynecologists and surgeons; Drs. T. G. Thomas, Lusk, Wyeth, Jacobi, Mann, Loomis and the officers of several medical organizations.

Dr. Roswell Park of Buffalo.—The well-known Professor of Surgery at Buffalo, has been sick with diphtheria, in consequence of contracting the disease from a patient on whom he had been called to operate. Dr. Park has our profound sympathy and our best wishes for his recovery from this disease, which has been of late markedly fatal among his surgical confrerés.

Honorary Appointments.—At the session of the Société Francaise D'Hygiène of Paris, held Oct. 13, 1893, among other appointments we notice that Medical Director Albert L. Gihon, U. S. N., Surgeon General Sternberg, U. S. A., and Dr. J. H. Kellogg were made Honorary Members; and Dr. Chas. A. Oliver of Philadelphia, Dr. Francis Dowling of Cincinnati, Dr. Frederick Montizambert of Quebec, Dr. E. Liceago of Mexico, and Dr. Rafael Lavista of Mexico, were made Foreign Associate Members.

Fatal Floods in Japan.—A press dispatch from Vancouver, B. C., Nov. 22, states: The steamer *Empress of China* arrived from Yokohama bringing advices that floods devastated the harbor of Nagasaki and did considerable damage as far as Yokohama and Tokio. In Okayarua prefecture 167 lives were lost and 2,400 houses destroyed. In Yamosquohi prefecture 320 fishermen were drowned, while large numbers of unrecognized bodies drifted ashore.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from November 11, 1893, to November 17, 1893.

Capt. HENRY P. BIRMINGHAM, Asst. Surgeon U. S. A., leave of absence granted is further extended one month.

First Lieut. CHARLES E. B FLAGG, Asst. Surgeon, is granted leave of absence for one month, with permission to apply for an extension of twenty days.

Lieut. Col. CHARLES R. GREENLEAF, Deputy Surgeon General, is relieved from duty in the office of the Surgeon General of the Army, and will repair to San Francisco, Cal., and assume charge of the medical supply depot in that city, relieving Lieut. Col. JOSEPH P. WRIGHT, Deputy Surgeon General, who, upon being thus relieved, will repair to St. Louis, Mo., and assume charge of the medical supply depot in that city.

LETTERS RECEIVED.

(A) Ayer, N. W. & Son, Philadelphia, Pa.; Ameman, G. L., Boston, Mass.; Allen, U., Jersey City Heights, N. J.; Armstrong, J. T., Beatrice, Neb.; Armstrong & Hodges, Carrolton, Ill.; (B) Baldwin, J. F., Columbus, Ohio; Bates & Morse Advertising Agency, (2) New York, N. Y.; Browning, C. C., Messina, Cal.; (C) Cain, J. S., Nashville, Tenn.; Cleaves, Margaret A., New York, N. Y.; Coburn, E. B., New York, N. Y.; Crothers, T. D., Hartford, Conn.; Caldwell, W. S., Freeport, Ill.; Castle, Wilmot & Co., Rochester, N. Y.; (D) Douchy & Co., New York, N. Y.; Duffield, H. T., Pittsfield, Ill.; Dios Chemical Co., (2) St. Louis, Mo.; Dollhe-Goodale & Co., Boston, Mass.; Dawson, J. L. Jr., Charleston, S. C.; Dowling, F., Cincinnati, Ohio; (E) Elliot, Ellsworth, New York, N. Y.; (F) Felton, H. C., Rome, Ga.; Ferguson, A. H., Winnipeg, Manitoba; Flynn, Wm., Marion, Ind.; (G) Grigsby, W. E., Blandinsville, Ill.; Gobrecht, W. H., Washington, D. C.; Goelet, A. H., New York, N. Y.; Gulchtel, A. L., New York, N. Y.; (H) Hurt, W. J, Waynetown, Ind.; Hummel & Parmele, (2) Philadelphia, Pa.; Hahn, H. H., Youngstown, Ohio; Harman, G. G., Huntington, Pa.; (J) Johnson, Chas. Freeman, San Francisco, Cal.; (L) Lichtenwallner, J. B., Springfield, Neb.; Lee Mond, R. F., Denver, Colo.; Lentz. Chas. & Sons, Philadelphia, Pa.; (M) Martin, F. H., Chicago, Ill.; Mattison, J. B., Brooklyn, N. Y.; Meyers, J. C., Clinton, Ill.; Marchand, F. A., Cincinnati, Ohio; McGahan, F. F., Aiken, S. C.; Mace, H. M., Hobart, Delaware; Metcalf, C. N., Indianapolis, Ind.; (N) Niles, S. R. Newspaper Adv. Agency, Boston, Mass.; Nowlin, A., Hutto, Texas; (P) Proteinol, Co., The New York, N. Y.; (R) Renfro, E. C. B., La Grange, Texas; (S) Schaeider, Milwaukee, Wis.; Stechert, G. E., New York, N. Y.; Sanders, Enno, St. Louis, Mo.; Shattuck, F. C., Boston, Mass.; (T) The Post Graduate, New York N. Y.; Todd, F. W., Redondo Hotel, Los Angelos Co., Cal.; (W) Wood, C. A., Chicago, Ill.; Waterman, O. M., Milwaukee, Wis.